

The Good Die Young? HD DVD Obituary

**HUB**

**The  
Computer  
Paper**

April 2008

Volume 21 Number 04

Free

Securing Your Sensitive  
Data: Strategies to Save  
Your Digital Life

Appeasing the Search  
Engine Gods

# Don't Get Burned

Online Backups  
That Work

Power Pellets: Spore Hits  
the Home Stretch

Storing and Securing Your  
Photos In the Field

**Tax  
Time!**

**Tear Into It**  
The New [hubcanada.com](http://hubcanada.com)

Trusted  
+  
Connected  
+  
Canadian

[hubcanada.com](http://hubcanada.com)



When time's  
not on your side,  
**we are.**

Our colour laser printers and multi-function centers print up to 21 professional looking colour pages per minute. At Brother, we are dedicated to providing high quality, fast and compact laser printers and multi-function centers. Our machines' user-friendliness and reliability means you finish printing, faxing, scanning and copying more quickly, so you can focus your time on what's important – your business. More proof that Brother is at your side every step of the way.



HL-4040CN  
Network colour laser printer



HL-4070CDW  
Wireless colour laser printer



MFC-9440CN  
Network colour laser 5-in-1

START  
INVEST  
NETWORK

in your business at [brother.ca/smb](http://brother.ca/smb)

Brother and its logo are trademarks of Brother Industries Ltd., Japan.  
All specifications are subject to change without notice. All registered trademarks  
referenced herein are the property of their respective companies.  
© 2007 Brother International Corporation (Canada) Ltd.



**brother** At your side.  
®



### Network Storage

## Raid+ RAID ENCLOSURE For dual 3.5" HDD

- USB mass-storage compliant (USB 2.0 and USB 1.1)
- Configurable RAID function for 2 drives.
- Support two 3.5" SATA-I or SATA-II hard drive
- Support up to 2 TB hard drive
- Support USB 2.0 or 10/100 RJ-45 network connection

Model : HUR1-SU2LA

For SATA I HDD or SATA II HDD



Also available in following Versions

• HUR1-SU2 ..... 1 x USB 2.0 Port  
(up to 480 Mbps).

• HUR1-SU2FWB ..... 1 x USB 2.0 Port (up to 480 Mbps),  
1 x IEEE 1394 A (up to 400 Mbps) &  
2 x IEEE 1394 B (up to 800 Mbps).



### Media Player

## media MEDIA PLAYER FOR 3.5" SATA I / SATA II HARD DRIVE

- Function as digital Media player for TV or external hard drive for PC
- Support multiple file format : Photo, Movie, Music and More
- Support AV output to TV, LCD TV & HI-FI speakers without PC or laptop
- USB mass-storage compliant (USB 2.0 and 1.1)
- USB host function available
- Includes with a remote control
- Firmware Upgradable

Model : HM3-SU2TV

Functions



Also available in following Versions

• HM2-U2TV ..... Support 2.5" IDE Hard Drive

• HM2-SU2TV ..... Support 2.5" SATA I / II Hard Drive



### External Storage

### Network Storage

### Synology Server

### QNAP Server

### Media Storage



**Smart-drive**

USB 2.0, eSATA & Firewire  
Model: HD6-serise



**NCIS**

Network Attached Storage  
Model: HD9-SU2LA



**Synology**

All-in-One 4-Bay NAS Server  
Model: CS-407



**QNAP**

All-in-One 2-Bay NAS Server  
Model: TS-209, 209 Pro



**MEDIAGATE**

Advance Digital Media Player  
Model : MG-450HD



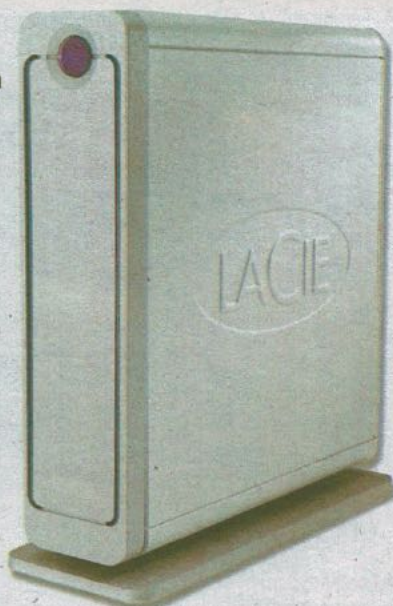
**Mediasonic**

Wireless-N Adapter  
Model : HW1-U2N

Coming Soon !!!



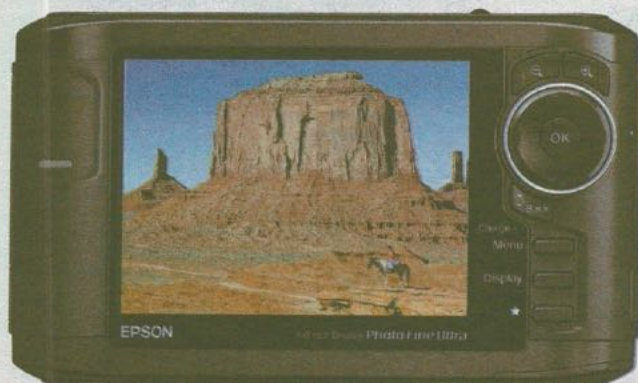
24



32



35



- 12 Secure Online Backup**  
Taking off-site backup to a whole new level
- 15 News Briefs**  
The latest from [www.hubcanada.com](http://www.hubcanada.com)
- 16 Tax Time**  
Software to make taxes less taxing
- 18 The Social Revisited**  
Zune is throwing a party...
- 22 The Battle has Ended, the HD War Continues**  
HD DVD, we hardly knew ye...
- 24 In the Lab: Network Attached Storage Drives**  
Easy file serving at home or the office
- 26 A Little Piece of Peace of Mind**  
RAID arrays for safety, security and speed
- 29 Power Pellets: Spore Hits the Home Stretch**  
Years of anticipation are soon to be over
- 30 In the Field: Trial by Fire**  
Preliminary report of the Olympus E-3
- 32 An Advanced Home Network**  
Wired for sight and sound... wirelessly
- 33 The Latest From LG**  
A look at what's in store and what's in stores...
- 34 Appeasing the Search Engine Gods**  
Does your site need to be listed as number one?
- 35 The Ongoing Photographic Problem**  
Storing and securing your photos away from home
- 36 Securing Your Sensitive Data**  
Tips and techniques for protecting your digital life
- 38 The Last Byte**  
Small storage we've known and loved

HUB: The Computer Paper Volume 21: Number 04  
27 Avenue Ave. Toronto, ON M5A 3E7  
Tel: 416-348-9666 Toll-free: 800-757-1379 Fax: 416-348-2551

**Editor** Andrew Moore-Crispin  
[andrew@ppublishing.ca](mailto:andrew@ppublishing.ca)

**Editor-at-Large** David Tanaka  
[david@ppublishing.ca](mailto:david@ppublishing.ca)

**Contributing Editors** Sean Carruthers  
Gord Goble  
Mike Palermo  
Lee Rickwood  
Marc Saltzman  
Chad Sapieha  
Ray Richards  
Helen Bradley

**Advertising Sales** Ontario/Toronto Karim Rizk  
[karim@ppublishing.ca](mailto:karim@ppublishing.ca)  
(416) 348-9666 ext. 252

Montréal Michael Silbiger  
[michael@ppublishing.ca](mailto:michael@ppublishing.ca)  
(514) 499-0404

Western Canada Vivian Jin  
[vivian@ppublishing.ca](mailto:vivian@ppublishing.ca)  
(604) 696-1389

**Business Group**  
**President** Scott Piccolo  
[scott@ppublishing.ca](mailto:scott@ppublishing.ca)

**Key Accounts Manager** Mark Bourck  
[markb@ppublishing.ca](mailto:markb@ppublishing.ca)  
(416) 348-9666 ext. 232

**Art-Director** Steve Stoner  
[steve@ppublishing.ca](mailto:steve@ppublishing.ca)

**Production Co-ordinator** Liz Van Der Wee  
[liz@ppublishing.ca](mailto:liz@ppublishing.ca)

**Office Administrator/Accounting** Charli Allen-LaForce  
[charli@ppublishing.ca](mailto:charli@ppublishing.ca)

**IT Manager** Steve Quinney  
[steveq@ppublishing.ca](mailto:steveq@ppublishing.ca)

Canadian Publication Mail,  
Sales Product Agreement #41037518.  
Printed in Canada. ISSN 1710-0143 HUB: TCP (B.C. ed.) ISSN  
1710-016X HUB: TCP (Edmonton ed.) ISSN 1710-0178 HUB: TCP  
(Eastern ed.) ISSN 1710-0186 HUB: TCP (Montreal ed.) ISSN  
1710-0194 HUB: TCP (Prairie ed.) ISSN 1710-0208 HUB: TCP (SW  
Ont. ed.) ISSN 1710-0216 HUB: TCP (Toronto ed.) HUB: The  
Computer Paper is published monthly by Piccolo Publishing Inc. All  
rights reserved. Reproduction in whole or in part without the  
permission of the publisher is strictly prohibited. Information  
presented here is compiled from sources believed to be accurate,  
however, the publisher assumes no responsibility for errors or  
omissions. The publisher reserves the right to refuse ads. The  
opinions expressed in the articles and columns and ads are those  
of the writer/advertiser and not necessarily those of HUB: The  
Computer Paper.

# Tear Into It

The New [hubcanada.com](http://hubcanada.com)

Trusted  
+  
Connected  
+  
Canadian



**LINKSYS**<sup>®</sup> by Cisco

# Share Your Digital Life

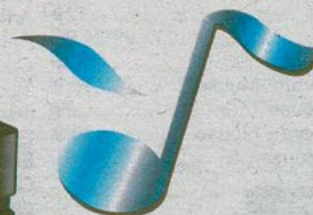
From your Linksys Networked Storage to any room in your home.



**Video**



**Network Storage System  
NAS200**



**Music**



**Pictures**

For music, movies, memories and more. Save them and share them.

Add it to your network today. [linksys.com/ca/NetworkStorage](http://linksys.com/ca/NetworkStorage)



**FUTURE SHOP**

**Office DEPOT.**

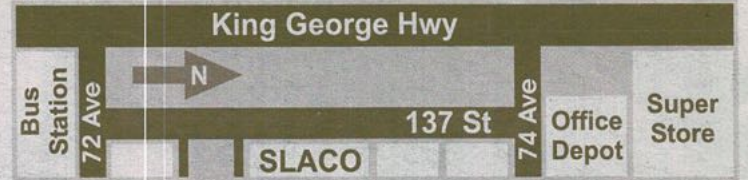
Linksys is a registered trademark or trademark of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Other brands and product names are trademarks or registered trademarks of their respective holders. Copyright © 2008 Cisco Systems, Inc. All rights reserved.





# SLACO

## COMPUTER



|                               |       |
|-------------------------------|-------|
| Intel Celeron Dual-Core E1200 | \$459 |
| Intel Pentium Dual Core E2160 | \$489 |
| Intel Pentium Dual Core E2180 | \$509 |
| Intel Core 2 Duo E4500        | \$549 |

Foxconn 45CMX Motherboard  
(Intel 945GC, 1333MHz FSB, SATA, Dual-channel)  
1.0G DDR2-667MHz RAM  
80GB 7200RPM S-ATA 8M Hard drive  
All-In-One Memory Card Reader  
Intel GMA PCI-E Graphics O/B  
Open PCI-Express 16x Slot  
LG H55N 20xDVD±RW Dual Layer Drive  
5.1 Channel 3D Sound Card O/B  
PS/2 Keyboard  
Logitech Optical Wheel Mouse  
17" P4-ATX USB2.0-Front Case  
10/100Mb Ethernet O/B  
Speakers w/Headphone Jack  
19" LG L196WTY Wide Screen LCD  
(1440x900 2ms, 3000:1, Dual Analog/Digital)  
**SOLERIA-2320**

|                                 |           |
|---------------------------------|-----------|
| Intel Celeron Dual-Core E1200   | \$509     |
| Pentium Dual Core E2160/2180    | \$539/559 |
| Intel Core 2 Duo E4500/6550     | \$599/649 |
| Intel Core 2 Quad Q6600(4x2.4G) | \$739     |

Asus P5N-MX Motherboard  
(NF610i, 1333MHz FSB, RAID, Dual Channel)  
2.0G DDR2-667MHz RAM  
160GB 7200RPM SATA2 8M Hard Drive  
All-In-One Memory Card Reader  
nVidia GF7050 PCI-E Video O/B  
Open PCI-Express 16x Slot  
LG H55N 20xDVD±RW Dual Layer Drive  
6 Channel 5.1 Sound Card O/B  
PS/2 Keyboard  
Logitech Optical Wheel Mouse  
17" P4-ATX USB2.0-Front Case  
10/100Mb Ethernet O/B  
Speakers w/Headphone Jack  
19" LG L196WTY Wide Screen LCD  
(1440x900 2ms, 3000:1, Dual Analog/Digital)  
**SOLERIA-4320**

|                                   |           |
|-----------------------------------|-----------|
| Intel Core 2 Duo E4500 /E6550     | \$689/749 |
| Intel Core 2 Duo E8400(2x3G 6M)   | \$869     |
| Intel Core 2 Quad Q6600(4x2.4G)   | \$849     |
| Intel Core 2 Extreme QX6850(4x3G) | \$1599    |

Asus P5B SE Motherboard  
(Intel P965, SATA, 1333MHz, RAID, Dual Channel)  
PC5300 2.0G DDR2-667MHz RAM  
320GB 7200RPM SATA2 16M Hard Drive  
All-In-One Memory Card Reader  
nVIDIA GF8400GS Video w/512MB/DVI  
LG H55N 20xDVD±RW Dual Layer Drive  
6 Channel 5.1 Sound Card O/B  
PS/2 Keyboard  
Logitech Optical Wheel mouse  
17" P4-ATX USB2.0-Front Case  
10/100/1000Mb Ethernet Card O/B  
Vibe 2.1 Speakers w/Subwoofer  
19" LG L196WTY Wide Screen LCD  
(1440x900 2ms, 3000:1, Dual Analog/Digital)  
**SOLERIA-6320**

|                                   |           |
|-----------------------------------|-----------|
| Intel Core 2 Duo E4500/E6550      | \$859/909 |
| Intel Core 2 Duo E8400(2x3.0G 6M) | \$1029    |
| Intel Core 2 Quad Q6600(4x2.4G)   | \$999     |
| Intel Core 2 Extreme QX6850(4x3G) | \$1769    |

Asus P5K-SE Motherboard  
(Intel P35, SATA, 1333MHz FSB, Dual Channel)  
2.0GB DDR2-800 Dual Channel RAM  
500GB 7200RPM SATA2 16MB Hard Drive  
All-In-One Memory Card Reader  
nVIDIA GF8600GT Video w/1.0G/DVI/TV-out  
LG H55N 20xDVD±RW Dual Layer Drive  
8 Channel 7.1 Sound Card O/B  
MicroSoft Internet PS2 Keyboard  
Microsoft Optical Mouse  
17" P4-ATX USB2.0-Front Case  
10/100/1000Mb Ethernet O/B  
Altec Lansing VS3251 5.1 Speakers Remote  
19" LG L196WTY Wide Screen LCD  
(1440x900 2ms, 3000:1, Dual Analog/Digital)  
**SOLERIA-8320**

|   |       |
|---|-------|
| Acer EX4620-6194 Intel Core 2 DUO 1.66G/1G/120G/14.1"/DVDRW/56K/Gigabit LAN/802.11g/XP Pro.....             | \$759 |
| Acer AS5315-2013 Intel Celeron-1.86G,120G,1G,15.4",DVD-RW,56K,LAN,802.11g,Vista Home.....                   | 549   |
| Acer TM5520-5314 AMD Dual core-1.9G/2G/160G/15.4"/DVDRW/56K/Gigabit LAN/802.11g/Finger/Camera/VHP.....      | 729   |
| Acer EX5620-4382 Intel Dual-core 1.6G, 1G/15.4"/120G/DVDRW/56K/GigaLAN/802.11g/Dual XP-Pro & Vista Bus..... | 669   |
| Asus F3KA-A1 AMD T160 M690/2G/160G/15.4"/DVDRW/56K/LAN/802.11g/Vista Premium.....                           | 1149  |
| Asus G2S-B2 Core 2 Duo-2.4G 3G/200G/17"(1920x1200)/DVD-RW/8600GT 256M/802.11g/Vist Premium.....             | 1999  |
| Asus U1E-A1 C2D ULV U7500 1.5GB,100GB,11.1"(1366X768),56K,LAN,802.11G/N,Bluetooth,Finger,Vista Bus.....     | 1849  |
| LG R405-A.CB01A9 Core2DUO-1.83G/2.0G/200G/14.1"/LAN/802.11g/Bluetooth/Camera/Vista Business/XP-Pro.....     | 1169  |
| LG E500-G AP05A9 Core 2 Duo -1.66G/2G/200G/15.4"/DVD-CDRW/802.11abg/B.T/Camera/Vista Premium.....           | 1019  |
| MSI M662-240CA Core DUO-2G/1G/120G/15.4"/DVDRW/56K/GB LAN/802.11g/bluetooth/camera/Vista Premium.....       | 799   |
| MSI Gx600 Core 2 Duo T7500/2.0G/160G/15.4"/DVDRW/56K/GB LAN/802.11g/Bluetooth/Camera/Vista Premium.....     | 1649  |

SODIM PC2700/3200 DDR 512M/1.0G.....\$34.9/59.99  
SODIM DDR2-667 512M/1.0G/2.0G.....19.9/28.99/49.9  
SODIM 144Pin SDRAM 128/256/512M.....34/44.9/84.9  
Planet wirelessG 54Mb USB/PCMCIA.....29.9

Bluetooth adaptor/USB IRDA Bridge.....19.9/19  
IBM External USB 1.44 Floppy Drive.....19.99  
2.5" Hard Drive 80/120/160G.....69.9/79.9/89.9  
2.5" S-ATA Hard Drive 120/160/250G.....79.9/99.9/168.9

| MONTHLY SPECIAL  |                   |
|--|-------------------|
| Logitech X530 5.1 Speaker 6pc .....                        | \$59.9            |
| Belkin Wireless-G 54Mb Router w/Hardware firewall.....     | 29.99             |
| nVidia GF8800GT w/512M DDR3/Dual DVI/TV-out.....           | 229.9             |
| Creative MuVo T100 MP3 Player 2.0G.....                    | 29.99             |
| LG GSA-H55N 20xDVD±RW Dual Layer w/software.....           | 25.99             |
| LG 19" L196WTY Widescreen Flat LCD Monitor.....            | 195.9             |
| (1440x900, 2ms, 3000:1,300CD/M2 Dual Along & DVI Input)    |                   |
| LG 22" L226WTY Widescreen Flat LCD Monitor .....           | 269.9             |
| (1680x1050, 2ms, 3000:1 Base Tilt,Swivel Analog&DVI Input) |                   |
| Secure Digital Card 2.0G/4.0G/8.0G.....                    | 14.99/26.99/49.99 |
| SD Card Ultra Speed 133x 2.0G/4.0G.....                    | 19.99/29.99       |
| Brother MFC-240C 6-in-1 Color Multi-Function Centre.....   | 79.9              |
| (Printer, Copier, Scanner, PhotoCentre, Fax, PC Fax)       |                   |

|  |                   |
|--|-------------------|
| MS Windows XP Home/Pro/MCE.....                | \$99.9/139.9/139  |
| MS Windows Vista Home basic/Premium.....       | 95.9/109.9        |
| MS Windows Vista Business/Ultimate.....        | 138.9/188.9       |
| MS Office 2007 Home & Student Edition.....     | 134.9             |
| MS Office 2007 Basic/SBE/Professional.....     | 168.9/234.9/298.9 |
| Windows Small business 2003 Server w/5CAL..... | 489               |
| Win2003 Server Standard w/5CAL.....            | 729               |
| MS Optical Mouse/Wireless.....                 | 13.99/24.99       |
| MS Keyboard Internet/Multimedia.....           | 18/22             |
| MS Ergonomic Value Pack Keyboard+Mouse.....    | 49.9              |
| MS Internet Keyboard+Optical Mouse.....        | 29                |
| MS Wireless Comfort 700 Keyboard+ Mouse.....   | 39.9              |
| MS Wireless Comfort KB+Laser Mouse.....        | 48.9              |

### CABLE/ADAPTER

|   |             |
|---|-------------|
| USB 2.0 PCI Adapter 5 Ports.....                          | \$19.9      |
| Enhanced PCI Printer Port Adapter 1/2 Port.....           | 25/29       |
| IEEE 1394 (Firewire) PCI Adapter 4 ports.....             | 24.9        |
| IEEE 1394 (Firewire) PCI Adapter w/Cable.....             | 32.9        |
| PCI Serial Adaptor 2 port w/16C550 UART.....              | 19.9        |
| USB to Serial 9 pin Adapter + 9 pin/25 pin Adapter.....   | 19.9        |
| Removable Hard Drive Rack IDE/S-ATA.....                  | 14.9/19.9   |
| 2.5" Notebook HD to 3.5" HD IDE Adapter .....             | 11.9        |
| USB Radio Recording support MP3 & WMA.....                | 14.9        |
| USB Fan & Light 2-in-1 .....                              | 4.99        |
| USB 2.0 Gold-Plated Printer Cable retail box.....         | 9.99        |
| USB 2.0 Cable Printer/Extension.....                      | 7/7         |
| USB to Parallel Printer Port Cable Adapter.....           | 19          |
| Monitor Extension VGA Cable Shield 6'/10'/15'/25' .....   | 12/15/19/25 |
| Monitor VGA Cable Shield 6'/10'/15'/25' .....             | 12/15/19/25 |
| DVI Cable For Digital Monitor 6'/10'/15'/25' .....        | 15/22/29/35 |
| 9 Pin Serial Cable 6 FT F/F Straight/cross.....           | 9.99/9.99   |
| 9 Pin Serial Cable 6 FT F/F Extension F/M .....           | 9.99        |
| USB 2.0 To IDE (3.5" & 2.5") Adaptor .....                | 19.99       |
| USB 2.0 To S-ATA+IDE (3.5" & 2.5") Adaptor .....          | 24.99       |
| S-Video Cable 6ft.....                                    | 6.9         |
| 40/80 Pin IDE Data Cable .....                            | 2.99        |
| 80 Pin Round IDE Data Cable .....                         | 7           |
| Parallel Port Printer Cable .....                         | 9.9         |
| Serial ATA (SATA) Data Cable .....                        | 2.99        |
| Serial ATA (SATA) Power Cable .....                       | 2.99        |
| KVM 3-in-1 6" Cable .....                                 | 12.9        |
| KVM Switch manual 2 Port/4 Port w/o cable .....           | 19/22       |
| Digital KVM Switch HotKey w/cable 2/4port.....            | 39/79       |
| EUSO UKS8204-DO 4 port USB KVM Switch.....                | 129         |
| EUSO UKS8104-RO 4 port KVM Stackable.....                 | 139         |
| USB Printer connect to Paranal port adapter.....          | 29          |
| VIA Chipset S-ATA & ATA PCI Adapter w/ RAID support ..... | 29          |
| ST Lab S-ATA PCI Adapter w/RAID support.....              | 29          |

| CASE/OTHER   |            |
|--|------------|
| 18" Case USB2.0 front 350w/450w Dual Fan.....      | \$29/48    |
| Sony 1.44M Floppy Drive ..                         | 14         |
| Power supply AT/ATX/450w .....                     | 29/24.9/39 |
| Dual Fan Power supply 450W.....                    | 44         |
| Antec SP-400 Ultra quit 400W Power supply.....     | 69.99      |
| Antec BP-500U Ultra quit 500W Power supply.....    | 79.99      |
| Antec True 350W Quit Power Supply.....             | 59         |
| Cooler Master 650W Power Supply.....               | 99.9       |
| Tisonic ATX-460-102DF 460W Quiet Power Supply..... | 69         |
| Tisonic ATX-410-102DF 410W Quit Power Supply.....  | 48.9       |
| Enermax Liberty ELT620AWT 620W Power Supply.....   | 179        |
| Enermax Noisetake EG495P-VE SFMA 485W.....         | 99         |
| OCZ OCZ600SXS 600w Silent Power Supply.....        | 109        |
| OCZ OCZ 700GXSSLI 700w Silent Power Supply.....    | 159        |
| Thermaltake W0117 Toughpower 750W P. Supply.....   | 219        |
| Thermaltake TR2-430W Power supply.....             | 59         |
| Belkin UPS w/software 425/550/650VA.....           | 59/75/89   |

### CD/DVD-ROM/R/RW

|  |           |
|--|-----------|
| Asus 52X Qiet CD-ROM.....                              | \$9.99    |
| Sony/LG 16X DVD-ROM.....                               | 19.9      |
| Dttech Portable(Slim) External 8xDVD-RW.....           | 99.9      |
| LG GSA-H20L 16xDVD±RW BLU-RAY & HD DVD Reader.....     | 188.9     |
| LG GH20LS10 20xDVD±RW Lightscribe/SATA w/software..... | 36.9      |
| LG GH20NS10 20xDVD±RW Dual layer SATA w/software.....  | 29.9      |
| LG GSA-H55N dual layer 20xDVD±RW w/soft ware.....      | 25.99     |
| Liteon DX-401S Blue-Ray Reader S-ATA.....              | 154.99    |
| Liteon LH-2B1S 2xBlue Ray DVD Rewriter S-ATA.....      | 348.9     |
| Pioneer DVR-212D SATA 18XDVD±RW D.L. W/software.....   | 29.9      |
| Pioneer DVR-115D dual layer 20XDVD±RW w/software.....  | 29.9      |
| Pineer BDC-2202 Blue-Ray Reader.....                   | 199.9     |
| Pioneer BDR-101AS Blue-Ray DVD-Writer w/software.....  | 698       |
| Plextor PX-800A 18xDVD±RW w/software.....              | 79.9      |
| Plextor PX-810SA 18xDVD±RW w/software .....            | 89.9      |
| Samsung SH-S203B 20xDVD±RW Dual-layer w/software.....  | 28.9      |
| Sony AW-Q170A Dual layer 18xDVD±RW software.....       | 32.9      |
| Blank CD Writable/Rewritable .....                     | 0.29/1.9  |
| Ritek Ridata 80Min 700MB 50 Pack Retail box.....       | 13.99     |
| Precision 4xDVD-R 4.7G 25Pack Retail Box.....          | 6.99      |
| Ritek Ridata DVD-R 8X/Printable.....                   | 0.39/1.50 |
| Ritek Ridata Dual Layer 8.5G.....                      | 3.99      |
| Ritek Ridata 6XDVD-RW.....                             | 2.49      |

### KEYBOARD/MOUSE

|   |             |
|---|-------------|
| Keyboard PS2 /Multimedia.....                             | \$5.99/8.99 |
| Fujitsu Keyboard 8729/4726.....                           | 18/58       |
| Logitech Deluxe 250 USB Keyboard .....                    | 15.9        |
| Logitech Internet 350 USB Keyboard.....                   | 18.99       |
| Logitech Deluxe 250 Desktop Combo(KB + Mouse).....        | 18.9        |
| Logitech Trackball Mouse Marble.....                      | 34.9        |
| Logitech Optical Wheel Mouse.....                         | 9.99        |
| Logitech G5 Laser Gaming Mouse.....                       | 46.9        |
| Logitech G7 Laser Gaming Mouse.....                       | 69.9        |
| Logitech Cordless G15 Gaming Keyboard.....                | 79.9        |
| Logitech Lx710 wireless Desktop Laser Keyboard+Mouse..... | 64.9        |
| Logitech Cordless MX 5000 Bluetooth KB & Mouse.....       | 119.9       |
| Logitech Cordless Keyboard + Optical Mouse.....           | 34.9        |

| CPU/MEMORY  |                   |
|---|-------------------|
| Sempron AM2 3600+(2.0G).....                            | \$54.9            |
| AMD Sempron64 AM2 LE1150(2.0G).....                     | \$44.9            |
| AMD Athlon64x2 Dual-core 4200/4800/5200.....            | 69.9/89.9/119.9   |
| AMD Athlon64x2 5600/6000/6400.....                      | 152.9/169.9/182.9 |
| AMD Phenon Quad Core 9500/9600.....                     | 214.9/249.9       |
| Intel Celeron-S775 3.33G/3.46G.....                     | 59.9/69.9         |
| Intel Celeron Dual core E1200(2x1.6G).....              | 62.9              |
| Pentium Dual core E2160(2x1.8G)/E2180(2x2.0G).....      | 79.9/92.9         |
| Intel Core 2 Duo 4500(2x2.2G).....                      | 129.9             |
| Intel Core 2 Duo E6550(2x2.33G).....                    | 178.9             |
| Intel Core 2 Duo E8400(2x3.0G 6M L2 Cache).....         | 299.99            |
| Intel Core 2 Quad Q6600(2.4G)/QX6850(3.0G).....         | 259.9/1049.9      |
| PC-133 SDRAM 128/256/512M.....                          | 14.9/32.9/49.9    |
| PC-133 SDRAM 16 chips 128/256M.....                     | 24.9/37.9         |
| DDR PC3200 256/512M/1.0G.....                           | 18.9/24.99/44.99  |
| Transcend DDR2 PC5400 512M/1.0G/2.0G.....               | 16.9/22.99/44.99  |
| OCZ DDR2-667mhz PC5400 1G dual-channel kit.....         | 54.9              |
| OCZ DDR2-800mhz PC6400 2G dual channel kit.....         | 79.9              |
| OCZ PC6400 2.0G Gold edition Dual-Channel kit.....      | 89.9              |
| Kingston PC3200 256/512M/1.0G.....                      | 22.9/36.9/54.9    |
| Kingston PC5300 DDR2 512M/1G.....                       | 19.9/26.9         |
| Transcend DDR2-800mhz PC6400 2.0G Dual-Channel Kit..... | 59.9              |
| Transcend JF130 High speed USB Flash Drive 2/4G.....    | 19.9/34.9         |
| Transcend JF185 High speed USB Flash Drive 2/4G.....    | 24.9/39.9         |
| USB2.0 Flash Drive 1G/2G/4G/8G.....                     | 8.99/14.99/24.99  |
| USB2.0 Flash Drive 8G/16G.....                          | 42.99/74.99       |
| Creative Labs MuVo T100 MP3 Player 2.0G .....           | 38.99             |

### DIGITAL CAMERA

|   |                         |
|---|-------------------------|
| Canon A460/A580/A590IS.....               | \$139.9/169.9/198.9     |
| Canon A570is/A650is/720is.....            | 194.9/419.9/214.9       |
| Canon SD750/SD850is/SD870is.....          | 279.9/329.9/334.9       |
| Canon SD1000/S5is/SD950is/G9.....         | 224.9/379.9/424.9/514.9 |
| Canon Camcorder DC210/DC50/ZR950.....     | 369/699.9/930.9         |
| Canon camcorder HV10/HR10/HG10.....       | 1139/1099/1019          |
| Casio EX-S880/EX-Z77/Z1080.....           | 269.9/198.9/269.9       |
| Casio EX-Z1200/EX-V8.....                 | 358.9/299.9             |
| Clympus FE310/FE340/FE350.....            | 149.9/198.9/248.9       |
| Clympus S820/S850/S1200/SP560.....        | 268.9/288.9/329.9/379.9 |
| Clympus E410/E410K2/E510K.....            | 459/669.9/639           |
| Sony DSCS750/DSCW55/DSCW120.....          | 179.9/189/219.9         |
| Sony DSCS7/DSCW35/DSCN2.....              | 369.9/189.9/369         |
| Compact Flash 1G/2G.....                  | 14.9/19.9               |
| Compact Flash 75x 2G/4G.....              | 22.9/29.9               |
| Compact Flash 120x 2.0G/4.0G/8.0G.....    | 24.9/32.9/59.9          |
| Compact Flash 226X 2G/4G/8G/16G.....      | 39.9/59.9/119.9/269.9   |
| Memory stick Pro Duo 1.0G/2.0G/4.0G.....  | 27.9/39.9/65.9          |
| Micro Memory Stick(M2) 1G/2G/4G.....      | 29.9/42.9/69.9          |
| Micro Secure Digital 1.0G/2.0G/4G/6G..... | 12.99/19.99/34.99/79.9  |
| Mini Secure digital 1.0G/2.0G.....        | 12.99/19.99             |
| Secure digital 1.0G/2.0/4.0G.....         | 11.9/14.99/26.99        |
| Secure digital 133x 2.0/4.0G.....         | 19.99/29.99             |
| XD-Picture Card 1.0G/2.0G.....            | 32.9/48.9               |

### FAX MODEM

|  |        |
|--|--------|
| Aspen 56K Data/Fax v.90 PCI Modem .....    | \$19.9 |
| Conexant 56K Data/Fax v.90 PCI Modem ..... | 18.9   |

### UPGRADE SPECIAL \$88.99

ECS GF6100 Mainboard + AMD Athlon64 3200+ CPU  
GF6100 3D Video O/B (Open PCI-E Video card slot)  
10/100Mb Ethernet/S-ATA/6-Channel 3D Audio O/B



Phone: 604-599-8785

Fax: 604-599-8758

Tech: 604-599-8745

#1116-7318 137th St.

Surrey, BC, Canada

V3W 1A3

Systems come with 3 years labor, 1 year part warranty; option of 1 month free internet access.  
All new systems are tested & burned-in for 48 hours before shipping. Financing and leasing are available.  
Prices reflect a 3% cash discount and are subject to change without notice. Price effective Aug.07 - Aug.30

www.slacocomputer.com

Mon-Fri. 10am-6:30pm;

Business Hours: Saturday 10am-6:00pm;

Sundays, Holidays Closed.

|                 |              |           |
|-----------------|--------------|-----------|
| AMD Sempron64   | LE1150(2.0G) | \$449     |
| AMD Athlon64 X2 | 4200+/4800+  | \$489/509 |
| AMD Athlon64 X2 | 5200+/5600+  | \$539/579 |
| AMD Athlon64 X2 | 6000+/6400+  | \$599/619 |

|   |  |  |
|---|--|--|
| Asus M2N-MX SE Motherboard<br>(nForce430,SATA, RAID)                          |  |  |
| 1.0G DDR2-667Mhz RAM  |  |  |
| 80GB 7200RPM S-ATA 8M Hard drive  |  |  |
| All-In-One Memory Card Reader   |  |  |
| nvidia GF6100 Video Card O/B  |  |  |
| Open PCI-Express 16x Slot   |  |  |
| LG H55N 20xDVD±RW Dual Layer Drive  |  |  |
| 6 Channel 5.1 Sound Card O/B  |  |  |
| PS/2 Keyboard   |  |  |
| Logitech Optical Wheel Mouse  |  |  |
| 17" P4-ATX USB2.0-Front Case  |  |  |
| 10/100Mb Ethernet O/B   |  |  |
| Speakers w/Headphone Jack   |  |  |
| 19" LG L196WTY Wide Screen LCD<br>(1440x900 2ms, 3000:1, Dual Analog/Digital) |  |  |
| <b>SOLERIA-1320</b>   |  |  |

|                 |              |           |
|-----------------|--------------|-----------|
| AMD Sempron64   | LE1150(2.0G) | \$509     |
| AMD Athlon64 X2 | 4200+/4800+  | \$549/569 |
| AMD Athlon64 X2 | 5200+/5600+  | \$599/629 |
| AMD Athlon64 X2 | 6000+/6400+  | \$649/669 |

|  |  |  |
|--|--|--|
| Asus M2NBP-VM CSM Motherboard<br>(NVIDIA Business Platform 430B, RAID, Dual Channel) |  |  |
| 2.0G DDR2-667Mhz RAM   |  |  |
| 160GB SATA2 8M cache hard drive  |  |  |
| All-In-One Memory Card Reader  |  |  |
| nVIDIA Quadro NV210S Graphics/DVI O/B  |  |  |
| Open PCI-Express 16x Slot  |  |  |
| LG H55N 20xDVD±RW Dual Layer Drive   |  |  |
| 6 Channel 5.1 Sound Card O/B   |  |  |
| PS/2 Keyboard  |  |  |
| Logitech Optical Wheel Mouse   |  |  |
| 17" P4-ATX USB2.0-Front Case   |  |  |
| 10/100/1000Mb Ethernet O/B   |  |  |
| Speakers w/Headphone Jack  |  |  |
| 19" LG L196WTY Wide Screen LCD<br>(1440x900 2ms, 3000:1, Dual Analog/Digital)        |  |  |
| <b>SOLERIA-3320</b>  |  |  |

|                 |             |           |
|-----------------|-------------|-----------|
| AMD Athlon64 X2 | 4200+/4800+ | \$619/639 |
| AMD Athlon64 X2 | 5200+/5600+ | \$669/699 |
| AMD Athlon64 X2 | 6000+/6400+ | \$719/739 |

|   |  |  |
|---|--|--|
| Asus M2N-X AM2 Mainboard<br>(NVIDIA nForce 5, RAID, Dual Channel)             |  |  |
| PC5300 2.0G DDR2-667Mhz RAM   |  |  |
| 320GB S-ATA2 16M Hard Drive   |  |  |
| All-In-One Memory Card Reader   |  |  |
| nVidia GF8400GS Video w/512M/DVI  |  |  |
| LG H55N 20xDVD±RW Dual Layer Drive  |  |  |
| 6 Channel 5.1 Sound Card O/B  |  |  |
| PS/2 Keyboard   |  |  |
| Logitech Optical Wheel mouse  |  |  |
| 17" P4-ATX USB2.0-Front Case  |  |  |
| 10/100/Mb Ethernet O/B  |  |  |
| Vibe 2.1 Speakers w/ Subwoofer  |  |  |
| 19" LG L196WTY Wide Screen LCD<br>(1440x900 2ms, 3000:1, Dual Analog/Digital) |  |  |
| <b>SOLERIA-5320</b>   |  |  |

|                  |             |           |
|------------------|-------------|-----------|
| AMD Athlon64 X2  | 4200+/4800+ | \$789/809 |
| AMD Athlon64 X2  | 5200+/5600+ | \$839/879 |
| AMD Athlon64 X2  | 6000+/6400+ | \$899/919 |
| Phenon Quad-Core | 9500/9600   | \$949/979 |

|   |  |  |
|---|--|--|
| Asus M3A/M2N-E SLI AM2 Mainboard<br>(AMD770/GF5 SLI, RAID, Dual Channel)      |  |  |
| 2.0GB DDR2-800 Dual Channel RAM   |  |  |
| 500GB 7200RPM SATA2 16MB Hard Drive   |  |  |
| All-In-One Memory Card Reader   |  |  |
| nVIDIA GF8600GT Video w/1.0G/DVI/TV-out                                       |  |  |
| LG H55N 20xDVD±RW Dual Layer Drive  |  |  |
| 8-Channel 7.1 Sound Card O/B  |  |  |
| Logitech Deluxe 250 desktop combo<br>(Keyboard + Optical Wheel Mouse)         |  |  |
| 17" P4-ATX USB2.0-Front Case  |  |  |
| 10/100/1000Mb Gigabit Ethernet O/B  |  |  |
| Altec Lansing VS3251 5.1 Speakers w/Remote                                    |  |  |
| 19" LG L196WTY Wide Screen LCD<br>(1440x900 2ms, 3000:1, Dual Analog/Digital) |  |  |
| <b>SOLERIA-7320</b>   |  |  |

## MOTHERBOARD

|  |                   |
|--|-------------------|
| ASUS M2A-VM-B/M2A-VM                         | \$74.9/76.9       |
| ASUS M2A-VM-HDMI/M2N-E                       | 87.9/109.9        |
| ASUS (AM2) M2NE-SLI/M2N-LR                   | 99.9/236.9        |
| ASUS (AM2) M2N-MX SE/M2N-MX SE Plus          | 67.9/69.9         |
| ASUS M2N-SLI-Deluxe                          | 149.9             |
| ASUS M2N-X/M2NPV-VM                          | 78.9/92.9         |
| ASUS AM2 M2NBP-VM/CSM(corporate edition)     | 89.9              |
| ASUS M2N32-SLI-Premium/M2N32-SLI-WF          | 209.9/189.9       |
| ASUS M2N32-WS-Pro/M2R32-MVP                  | 219.9/134.9       |
| ASUS M3A/M3A32-MVP-WF                        | 94.9/229.9        |
| ASUS M3A78-EMH                               | 104.9             |
| ASUS P5SD2-X/P5VD2-MX-SE/P5B-Premium         | 69.9/69.9/219.9   |
| ASUS P5B-VM-SE/P5B-SE                        | 99.9/99.9         |
| ASUS P5E/P5E-VM-DO                           | 238.9/129.9       |
| ASUS P5K/P5K-Deluxe-WF                       | 154.9/209.9       |
| ASUS P5K-E/P5K-E/WF                          | 154.9/164.9       |
| ASUS P5K-Premium-WF/P5K-SE/P5K-WS            | 204.9/109.9/224.9 |
| ASUS P5K3-Deluxe-WF/P5K64-WS                 | 219.9/244.9       |
| ASUS P5L-MX/P5N-E-SLI                        | 79.9/134.9        |
| ASUS P5N-MX/P5N-T-Deluxe NF780i              | 74.9/266.9        |
| ASUS P5NT-WS/P5N32-E-SLI                     | 234.9/224.9       |
| ASUS P5W-DH-Deluxe/P5WDG2-WS-Pro             | 189.9/289.9       |
| ASUS Striker NF680i/StrikerII NF780i         | 314.9/319.9       |
| ASUS StrikerII EX                            | 459.9             |
| Asus Intef X38 Chipset Maximus-Form/EXT      | 269.9/359.9       |
| ECS 945GZT-M/945P-A(3.0)                     | 78/89.9           |
| Foxconn 760GXK8MC-RS/K8M890-M2MA             | 69/79             |
| Foxconn 45CMX                                | 59.9              |
| PC Partner 915PAS7-A47 i915 chipset Fireware | 79                |
| Gigabyte GA965P-DS3/S3                       | 144/115           |
| Gigabyte GAP35-DS3R                          | 159.9             |
| Gigabyte GAM57SLI-S4/GAM595SLI-S5            | 124/209           |
| MSI P35-NEO-F/965 Platinum                   | 125/159.9         |
| MSI K9N-Diamond/K9N-SLI-Platinum             | 199/145           |

## MONITOR

|   |               |
|---|---------------|
| Acer LCD 17" AL1716FB/AL1717FBD                 | \$165.9/189.9 |
| Acer 19" LCD X193WB/20" X203WB                  | 192.9/205.9   |
| Acer 20" Ferrari F20 800:1 8ms DVI w/speaker    | 449.9         |
| Acer 22" X223WBD                                | 238.9         |
| Acer 24" X243WBD/26" X263WBD                    | 369.9/449.9   |
| Acer LCD TV 32" AT3220A 1366x768 8ms DV         | 644.9         |
| Daytek LCD Touch Screen 15"/17"                 | 599/769       |
| Daytek 46" DT-4660 8ms 1080P                    | 1199          |
| KDS 19" K-92BW 500:1 5ms Wide screen            | 189.9         |
| KDS 20" K20MDWB 1000:1 5ms                      | 219.9         |
| KDS 22" K22MDWB 700:1 2ms DVI                   | 239.9         |
| KDS 24" K-24MDWB                                | 429.9         |
| LG 17" L1752TX 1600:1 8ms Analog/DVI            | 189.9         |
| LG L1753TX Analog/Digital 5ms 2000:1            | 204.9         |
| LG 1918S 1280x1024dpi 8ms                       | 219.9         |
| LG 1953T Dual Analog/Digital 5ms 2000:1         | 224.9         |
| LG 19" L194WTX W.screen 5ms 2000:1 VGA/DVI      | 194.9         |
| LG 19" L196WTY 2ms 3000:1 VGA/DVI Tilt, Swivel  | 195.9         |
| LG 20" L206WTY 1680x1050 2ms 3000:1             | 235.9         |
| LG 226WTY 22" 1680x1050 2ms 3000:1 Tilt, Swivel | 269.9         |
| LG 24" L246WH 1920x1200 5ms 2000:1 HDMI         | 455.9         |
| LG L245WP 24"1920x1200 8ms 1000:1 HDMI          | 529.9         |
| Samsung 17" 720N LCD 600:1 8ms                  | 185.9         |
| Samsung 19" 931BW                               | 209.9         |
| Samsung LCD 931C                                | 259           |
| Samsung LCD 920NM                               | 199.9         |
| Samsung LCD 20" 203B                            | 234.9         |
| Samsung LCD 22" 225BW 5ms 700:1                 | 269.9         |
| Samsung LCD 24" 245T 1500:1 6ms                 | 695.99        |
| Samsung LCD 27" 275T 1000:1 6ms                 | 925.99        |
| ViewSonic 17" VA1703WB/19" VA903B               | 188.9/235.9   |
| ViewSonic 19" VA1903WB/VA1916WB                 | 208.9/224.9   |
| ViewSonic LCD 19" VP930/VG1930WM                | 348/249       |
| ViewSonic LCD 19" VX1945WM/VX2035WM             | 285/269       |
| ViewSonic LCD VG2030WM/VP2130B                  | 279.9/615.9   |
| ViewSonic LCD 22" VX2235WM                      | 299.9         |
| ViewSonic 24" VX2435WM                          | 678.9         |

## NETWORKING

|  |              |
|--|--------------|
| CNet 10/100Mb Switch 5/8/16 Port                 | \$25/29.9/69 |
| Impression 10/100Mb Ethernet Card                | 9.9          |
| Asus Wireless G 54Mb WL-520GU Router             | 54.9         |
| Asus Wireless N Multi-function WL500W Router     | 108.9        |
| Asus Wireless PCI WL-138G-V2/WL130N              | 29.9/74.9    |
| Belkin Wireless G 54Mb PCI Ethernet Adapter      | 28.99        |
| Belkin wireless-G 54Mb Router                    | 29.99        |
| NovaTech Wireless-G 54Mb Router                  | 34.9         |
| Planet WirelessG 54Mb Ethernet PCI/PCMCIA        | 28.9/29.9    |
| Planet 10/100Mb Switch 5/8 Port                  | 24.9/34.9    |
| Planet PL-201 85Mb Power line Ethernet Adapter   | 59.9         |
| Planet 4 Port Router w/ Hardware Firewall        | 32.9         |
| D-Link Wireless DI-524 Router 802.11G 54Mb       | 53.9         |
| D-Link Wireless DI-624 ExtremG Router 108Mb      | 54.9         |
| D-Link DIR-625 Wireless-N Router                 | 89.9         |
| D-Link DWA552 Extrem N Wireless Rangebooster PCI | 79.9         |
| D-Link DWL-G630 54Mb PCMCIA LAN Wireless         | 34.9         |
| D-Link wireless LAN PCI DWL-G510 54Mb            | 45.9         |
| D-Link wireless LAN PCI DWL-G520 108Mb           | 52.9         |
| D-Link wireless LAN PCMCIA DWL-G650 108Mb        | 39.9         |
| D-link 24 Port DES-1024D                         | 99.9         |
| D-Link Switch 8 port DSS-8+/16 port DSS-16+      | 49/78        |
| D-Link Gigabit Switch 5 port DGS-1005D           | 49.9         |
| D-Link Gigabit Switch 8 port DGS-1008D           | 69.9         |
| Linksys wireless PCI card WMP54G                 | 49.9         |
| Linksys WUSB54G wireless USB card                | 49.9         |
| Linksys WPC54G wireless PCMCIA card              | 49.9         |
| Linksys WRT54G 54Mb wireless G router            | 59.9         |
| Linksys WRT300N wireless -N Router               | 109.99       |
| Linksys WMP300N wireless -N PCI Adapter          | 79.99        |
| Linksys WUSB300N wireless -N USB Adapter         | 79.99        |
| Linksys WPC300N wireless -N PCMCIA .ter          | 79.99        |
| Netgear Gigabit Switch 4 port GS605NA            | 54.9         |
| Netgear Gigabit Switch 8 port GS608NA            | 78.9         |
| Netgear 10/100MB Switch 16 port FS116NA          | 79.9         |
| Cable Assembly 3/6/10                            | 4/5/6        |
| Cable Assembly 25/50/75/100ft                    | 9/14/19/24   |
| CAT5e Cable 50/75/100/1000ft                     | 9/12/15/75   |

## PRINTER/SCANNER

|   |                              |
|---|------------------------------|
| Brother 240C/440CN/465CN                  | \$79.9/129.9/99.9            |
| Canon IP1800/3500/4500/IP90               | 68.9/108.9/164.9/294.9       |
| Canon IP6700D/Pro9000/Pro9500             | 199.9/579.9/859.9            |
| Large format IPF5100/W6400/IPF8000        | 2129/3719/5899               |
| Large Format IPF5000/IPF610/IPF710        | 1539/2349/4049               |
| Canon MP-140/210/520/830/960              | 99.9/109.9/184.9/299.9/389.9 |
| Canon MFC MF-3240/4150/6530/8180C         | 209/299/669/849              |
| Canon Scanner 4400F/8800F/LIDE25          | 156.9/248.9/89.9             |
| Epson C120/1400R/1800                     | 95.9/279.9/459.9             |
| Epson CD printer R280/380/800/2400        | 114.9/145/364.9/729          |
| Epson CX4450/7450/8400                    | 59.9/89.9/109.9              |
| Brother Laser HL-2030/2040                | 79.9/89.9                    |
| Brother HL 2070N/5250DN                   | 129.9/289.9                  |
| Brother Color Laser 4040CN/4050CDN        | 469.9/549.9                  |
| Okidata Color Laser C3400N/C5500N         | 379.9/569.9                  |
| Okidata Color Laser C5800LDN/C6000N       | 759.9/669                    |
| Okidata DOT Matrix 186/186S/320T          | 269/319/349                  |
| Samsung Laser 2010/3051N/3561N            | 79.9/174.9/619.9             |
| Brother Toner TN 250/350/460/560          | 29.9/59.9/59.9               |
| Canon Toner w/Drum E40/A30/S35/FX-3       | 69/69/54/54                  |
| HP Toner w/Drum C7115A/C7115X/Q2612A      | 49/54/59                     |
| HP Toner w/Drum C92298A/C3903A/C4092A     | 49/49/49                     |
| Panasonic Toner FA76/UG3313/UG3350        | 19.9/75/75                   |
| Samsung Toner w/Drum ML1610D/1210/1710D   | 62.9                         |
| Samsung Toner Drum SF4500/SF5100/SCX4216D | 62.9                         |
| SamsunG Toner Drum SCX-4521D3             | 69                           |

## SOFTWARE

|   |         |
|---|---------|
| McAfee Virusscan 2008 Plus                                      | \$19.99 |
| (McAfee AntivirusScan 2008+ Software Firewall + Antispyware)    |         |
| McAfee Internet Security Suite 2008                             | 25.9    |
| Norton Antivirus 2008   | 19.99   |
| Norton Internet Security 2008                                   | 29.99   |
| (Norton Antivirus + Software Firewall + Anti-Spam + Anti-Popup) |         |

## SOUND/SPEAKER

|   |             |
|---|-------------|
| PowerData PCI Sound Card 3.1/5.1                | \$14/16     |
| Power Data UAB External Sound Card              | 24.9        |
| Creative SB Audigy SE 7.1                       | 29.9        |
| Creative SB X-Fi Xtreme Sound                   | 49.9        |
| Creative SB X-Fi Xtreme Audio retail box        | 69.9        |
| Creative SB X-Fi Xtreme Gamer                   | 95.99       |
| Creative SB X-Fi Xtreme Gamer Fatality Pro      | 138.9       |
| Creative SB X-Fi Platinum Fatality Champion     | 178.9       |
| Vibe 2.1 Speaker with subwoofer/2 pc Speaker    | 11.9/6      |
| Altec Lansing VS3251 5.1 Spk. w/Wireless remote | 58.9        |
| Altec Lansing FX4021/FX5051/FX6021              | 129/219/215 |
| Logitech Z5500                                  | 299.9       |
| Logitech X540/X530                              | 78.99/69.9  |

## STORAGE

|  |                        |
|--|------------------------|
| Western Digital 80G 7200 RPM IDE(PATA) Hard Drive            | \$43.99                |
| IDE (Parallel-ATA) 7200RPM Hard drive with 8MB buffer cache: |                        |
| 80G/160G/250/320G  | \$45.99/55.9/67.9/79.9 |
| IDE(Parallel-PATA)7200rpm Hard drive with 16MB buffer cache: |                        |
| 320G/500G  | 89.9/109.9             |
| SATA 8M 80G/160G/250G  | 44.9/55.9/66.9         |
| SATA 16M 250/320/500G  | 69.9/82.9/105.9        |
| WD Rapter 10000rpm 74/150G                                   | 148.9/184.9            |
| Seagate Cheetah ST314685SS 147G 15000rpm SAS                 | 269.9                  |

## VIDEO

|  |             |
|--|-------------|
| Asus PCI-E 256M EAH 2400Pro/2600Pro.....       | \$59.9/84.9 |
| Asus PCI-E EAH3850 256M/512M.....              | 194.9/205.9 |
| Asus PCI-E EAH3870 w/512M/HTDP/DVI/TV-out..... | 224.9       |
| Asus PCI-E Silent 256M EN8500GT/8600GT.....    | 99.99/119.9 |
| Asus EN8800GT 512M.....                        | 258.9       |
| Asus 768M EN8800GT/8800Ultra.....              | 499/699     |
| ATI X1650Pro TV-out DVI PCI-E 512M.....        | 69.9        |
| ATI X1650Pro AGP TV-put DVI 256/512M.....      | 84.9/89.9   |
| ATI AGP 8X HD2600Pro 512M DVI.....             | 108.9       |
| ATI AGP 8X HD2600XT 512M DDR3 DVI.....         | 138.9       |
| ATI X1950GT PCI-E 256M DDR3,DVI.....           | 138.9       |
| ATI X1950Pro PCI-E Dual GPU 1.0G.....          | 458.9       |
| ATI HD2600Pro AGP8x DVI 512M.....              | 109.9       |
| ATI HD2600Pro PCI-E DVI w/audio 512M.....      | 84.9        |
| ATI HD2600XT PCI-E DVI w/audio 256/512M.....   | 108.9/124.9 |
| ATI X2900Pro 512M/1.0G.....                    | 278.9/329.9 |
| ATI HD3870 512M DDR4/DVI/TV-out.....           | 244.9       |
| eVGA AGP 6200 AGP8x 128M TV-out.....           | 39.9        |
| eVGA AGP 6200 AGP8x 256M TV-out DVI.....       | 44.9        |
| eVGA PCI-E 7200GS TV-out, DVI 256M.....        | 44.9        |
| eVGA PCI-E 256M 7300GT/7600GS.....             | 65.9/94.9   |
| eVGA PCI-E 7600GT 256M DDR3/TV-out/DVI.....    | 109.9       |
| eVGA PCI-E 256M, DVI GF8400GS/8500GT.....      | 49.9/74.9   |
| eVGA 8600GT 256M DDR3 DVI TV-out.....          | 114.9       |
| eVGA 8600GTS 256M DDR3 DVI TV-out.....         | 159.9       |
| eVGA GF8800GT 512M.....                        | 239.9       |
| eVGA GF9600GT 512M.....                        | 189.9       |
| eVga E-GeF9800 Gx2 1024M.....                  | 609.9       |
| Gigabyte 8800GT 512M.....                      | 249.9       |
| Gigabyte 8800GTS 640M.....                     | 399         |
| Leadtek 8800GTS 640M/8800GTX 768M.....         | 399/559     |
| Matrox Parhelia PCI-E 128M Dual DVI.....       | 339         |
| Matrox Parhelia w/all PCI & PCI-X 256M.....    | 2499        |
| MSI NX8800GTS 640M/NX8800GTX 768m.....         | 409/569     |
| Palit GF8400GS DVI TV-out PCI-E 256/512M.....  | 48.9/58.9   |
| Palit GF8600GT DVI TV-out 256M/1.0G.....       | 114.9/129.9 |
| Palit GF8800GT 512M/1.0G.....                  | 229.9/289.9 |
| Zotac PCI-E DVI GF8600GT 512M.....             | 139.9       |
| Zotac PCI-E GF8800GT 512M/1.0G.....            | 248.9/298.9 |
| Zotac PCI-E 512M DDR3 GF9600GT.....            | 189.9       |
| TV Tuner w/Remote.....                         | 39          |
| Avermedia TV-PVR150+ TV tuner.....             | 99          |
| External USB TV-Tuner.....                     | 39          |
| Diret TV Box watch TV without computer.....    | 68          |
| Hauppauge WinTV-USB2/PVR-150.....              | 98.9/89.9   |
| Hauppauge WinTV-PVR-150L/PVR-150N.....         | 79.9/99.9   |
| Hauppauge WinTV-HVR1600/HVR-160R.....          | 108.9/128.9 |
| Hauppauge WinTV-PVR500(2xTuner)/HVR950.....    | 188.99/99.9 |





Back in the day which in tech terms is a euphemism for "about ten years ago," you bought a CD and that was that. You were now the proud owner of a piece of pressed polycarbonate, digitally encoded with 15 of your then-favourite band's hits. You didn't own the songs on that disc but you did own the disc itself. It was yours to do with as you pleased... assuming you didn't copy the music and sell it or hand it out for free.

Now, assume you lend your CD to a friend. You can't play it anymore because you don't have access to the disc. After a week (or six months if your friends are anything like mine) you get your CD back. And with the return of the disc, you realize that Warrant's Cherry Pie album is not quite to your tastes anymore. So, you run down to Looney Tunes, Dr. Disc, Spin Doctor or any number of smaller record shops, Cherry Pie and several other discs that have fallen out of favour stashed in your backpack, to see what the proprietor might give you for them. Probably a mere couple of bucks a piece but every bit helps. With the proceeds, you pick up a couple of used discs from the shelf.

You're happy because you traded in some music that you no longer listened to or felt any connection with. The store owner's happy because he or she can put a mark-up on the discs you sold and sell them to the next person who in turn, will be happy to be getting a deal. That happiness may abate once they throw Warrant's Cherry Pie in their CD player and realize why this particular disc found its way to the the used bin in the first place, but that's none of our concern. Caveat emptor and all that.

What was sold, marked up and sold again was a thin piece of polycarbonate. With it went your usage rights to the content on the disc. If you made a tape of the CD to play in your car, you really shouldn't be listening to it. And not just because it's Warrant. Your usage rights of the music disappeared along with that piece of

polycarbonate. It's digital rights management (DRM) from a less digital time.

## Digital killed the...

Enter downloadable music. It's more convenient: you can grab the latest single right from your desk while you're still in your underwear. Try that at HMV. It's less expensive: generally speaking, a full album can be had for \$10 compared with usually slightly more for a hard copy CD. But it's also less "yours": you can't really lend it to a friend, unless you're willing to part with your MP3 player for a couple of weeks – or unless you both have a Zune which is somewhat unlikely at this point in time. You can't sell it to someone else when you're over the top-40 band in question. There is no such thing as a second-hand digital download. If you don't like the music on your PC or player anymore, tough luck; either delete it or archive it and buy some more.

The music we buy has never been ours; what we paid for was the delivery media; a CD (or tape, MiniDisc, LP, 8 track or wax cylinder). With it came the usage rights for the music. Music purchased digitally muddies the waters of ownership. There is no physical item being purchased and since there are no-resale clauses within the end user license agreement for the music and the software you used to download it.

If, heaven forbid, someone breaks in to your house and steals your extensive CD collection, your home insurance policy would cover the cost of replacement (or not... read the fine print). Try getting your insurance provider to pony up for your extensive, legally purchased iTunes, Napster or PureTracks.ca collection. I have a sneaking suspicion it would be an uphill battle. Figure that your entry-level hard drive based digital audio player probably has 40GB of storage space, more likely it's 80GB and some go as high as



formerly known as  
"Discount Mac Club"

145-4471 No.6 Road, Richmond, BC, Canada V6V 1P8

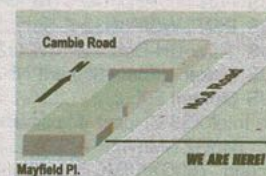
Tel: (604) 821-1228

Fax: (604) 821-0813

Web: [www.dmac.ca](http://www.dmac.ca)

Email: [sales@dmac.ca](mailto:sales@dmac.ca)

Hours: Mon-Fri 10am - 6pm, Sat 10am - 2pm



## TOP 10 Reasons to Purchase from DMAC

- 1 Good Product Availability
- 2 Knowledgeable Mac Staff
- 3 Complimentary 2-hour Mac OS X 10.5 Leopard Introductory Class
- 4 Complimentary 1-hour On-site 1-on-1 personal computer tutoring
- 5 Warranty or Out-of-warranty Repairs: Apple Authorized Service Centre with experienced Apple Certified Technicians
- 6 We accept trade-in
- 7 Complimentary 1-year Mac User Group membership
- 8 Discount on cash purchases\*
- 9 Buy a new Mac, and have Microsoft Windows XP installed at a special discounted price
- 10 **Current Promotion:** Buy a new Mac and a Brother All-in-one Printer for only \$50.00 \*



\*Some restrictions apply. Please call for details.

## Introducing the new MacBook Air



Introducing the world's thinnest notebook: MacBook Air. It measures an unprecedented 0.16 inches at its thinnest point while its maximum height of 0.76 inches is less than the thinnest point on competing notebooks. In addition to a stunning 13.3-inch LED-backlit widescreen display, MacBook Air offers a full-size and backlit keyboard, a built-in iSight video camera for video conferencing, and a spacious trackpad with multi-touch gesture support, letting users pinch, rotate and swipe. The new notebook is powered by a 1.6 GHz or 1.8 GHz Intel Core 2 Duo processor with 4MB L2 cache, and it includes as standard features 2GB of memory, an 80GB 1.8-inch hard drive, and the latest 802.11n Wi-Fi technology and Bluetooth 2.1. Starting at just \$1,899.

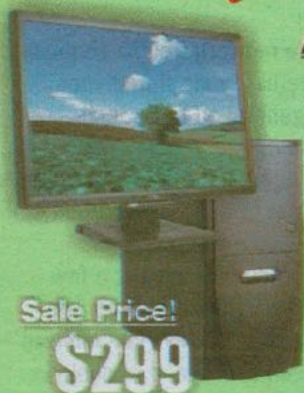
Now you can order Mac accessories online @ <http://www.dmac.ca>

Authorized Reseller  
and Service Provider



# Phase1 Systems

## April Super Sale!



### April Special!

AMD 65 3500 M2 Processor  
Asus M2N-MX SE Motherboard  
1GB DDR2 Transcend 667 Memory  
Western Digital 80GB Sata Hard Drive  
LG 18X DVD Sata Writer w/Software  
Nvidia 6100 On Board Video On Board  
10/100 Lan  
17" Foxconn Tower Case  
w/400Watt Power  
Microsoft Enhanced Keyboard  
Microsot Optical Mouse



### April Special!

Intel Core 2 Duo 2.2 E4500 CPU  
Asus P5N-E SLI 775 Motherboard  
2 GB DDR2 Memory  
250GB Western Digital Sata Drive  
LG 18X DVD SATA Burner w/Software  
Nvideo 8600GT PCI Express Video Card, On Board Sound  
10/100/1Gb Lan  
Sonata III Silent Tower Case  
w/500Watt Power  
Microsoft Multimedia Keyboard  
Microsoft Optical Wheel Mouse

## DESKTOP SYSTEM OPTIONS

WINDOWS XP HOME - \$99 VISTA BASIC - \$99 VISTA BUSINESS - \$159 17" ACER LCD - \$185 22" ACER LCD - \$269  
WINDOWS XP PRO - \$159 VISTA PREM - \$119 VISTA ULTIMATE - \$219 19" ACER LCD - \$199 24" ACER WIDESCREEN - \$399



### MSI Pink PR-210 \$955

AMD Turion™64 X2 Processor  
Windows Vista® Home Premium  
12" ACV (Amazing Crystal Vision)  
Widescreen Display  
120GB Hard Drive  
1GB Memory  
ATI Radeon Xpress 1270 Video  
Elegant and Slim Design in Fashion Color  
Fingerprint Reader  
AI Array MIC  
HDMI (High-Definition Multimedia Interface) Output  
Built-in 1.3 Mega Pixel Webcam  
Built-in Digital TV Receiver (optional)  
Weight: 1.8kg



### Acer Gemstone 5920 \$899

Intel® Core™2 Duo Processor T5550  
1.83GHz, 667MHz 2MB L2 Cache  
160GB Hard Drive 5400RPM  
Super-Multi (DVD R +/-) DL  
5-in-1 Memory Card Reader  
15.4" WXGA Crystal Brite Screen  
NVIDIA® GeForce® 8600M GS  
256MB  
802.11a/b/g Wireless LAN  
10/100/1GB Lan  
Bluetooth  
V.92 Integrated Modem  
1.3MP Webcam  
Six Cell Lithium Ion Battery  
Microsoft® Works 8.5 (full version)  
Windows Vista® Home Premium



### Asus A7K-A1 \$1299

AMD Turion™ 64 X2 TL60 2.0GHz  
Windows Vista® Home Premium  
2GB DDR2 667MHz (1Gx2)  
17" WXGA+ (1440 x 900)  
ATI HD 2600 DDR3 256MB (DX10)  
160GB 5400R SATA  
DVD Super Multi Dual Layer LS  
5-in-1 card reader (MMC, SD, MS/MS-Pro, and XD)  
1.3M Pixels High-resolution Webcam  
10/100/1000 Lan  
802.11/b/g Wireless Lan  
Bluetooth® V2.0+ EDR  
5 x USB 2.0 ports, 1x IEEE 1394 port  
1 x HDMI, 1x E-SATA port  
Built-in 4 stereo speakers  
Battery: 8 cells Lithium Ion  
FREE Carry Case & Mouse  
2-year limited global hardware warranty



### MSI - Gx700-038CA \$1499

Gain 20% CPU Speed Boost in AC Model  
Intel T7500 - 2.2GHz Core 2 Duo  
Microsoft Windows Vista Home Premium  
Chipset, 2GB DDR2 Memory  
Color UV Black  
17" Widescreen (1920x1200) Non Glare  
Geforce 8600M GT 512MB Video  
160GB SATA Hard Drive  
DVD Dual Layer R/W, Wireless 802.11 a/g/n  
USB 2.0 Port X 3, IEEE 1394 Firewire  
10/100/1GB Lan, HDMI-Out X 1  
Battery Li-Ion 6 Cells, Web cam, 1.3M Pixel  
Card Reader 4 IN 1, Bluetooth  
Carry Bag, Gaming Mouse and Headset  
2 Year Warranty  
Price \$ 1699 (After \$100 Mail-In Rebate)



Why us? Because with our head technician's 25 years experience leading our team, we can offer you fast, accurate and professional service. 15 years with the BBB and no complaints, our record speaks for itself! Our work is guaranteed. Whether you come see us or we come see you, you will see what real service and support is all about!

**Kingston 1GB 667  
DDR2 Memory  
\$29**

**Sale!**  
**Seagate Barracuda  
1TB SATA Drive  
\$269**



**1080p  
BitTorrent**  
DIGITAL ENTERTAINER HD  
EVA8000  
Streams movies, videos, music,  
Internet radio, and photos from your  
home PCs and storage devices to  
your HDTV Wired & Wirelessly!  
**\$369**



**NEW! WIRELESS N ROUTER**  
AIRLINK AR680W Wireless 300N  
Router (Draft 802.11N) Fixed  
Antennas  
**\$89** ~~Reg. \$255~~  
**Save \$40!**



LG GGC-H20L BLU-RAY & HD-  
DVD Reader  
BD-ROM 6X  
HD DVD-ROM 3X  
DVD+RW 16X8X6 DL 4X  
Lightscribe  
**\$199**



Thood DPF-LCD10K2 10.4 inch LCD  
Digital Photo Frame with  
Interchangeable Border  
**Price for 10" \$ 179**  
**Price for 7" \$ 99**



www.phase-1.com

For more information, email us at: info@phase-1.com

Phone: 604.291.1558 Fax: 604.298.5126  
410 Willingdon Ave. Burnaby, BC, V5C 5G4  
Monday to Friday 9:30am - 8:00pm, Saturdays: 10:00am - 5:00pm





160GB. Now, assume that you've filled the entry-level hard drive with legally purchased digital music. Figure \$1 per song and figure the device can hold about 8,000 songs (assuming 4.5MB per song). That's \$8,000. What happens if you lose your MP3 player or it's damaged beyond repair. You buy a new one, try to sync it with your PC only to find your usage rights for the music you're trying to load up went the way of your errant or busted MP3 player.

So what's the answer to personal media ownership? Well, since we've never really owned the music we've bought and given that legit music download sites make that more clear than ever before, is a subscription service the answer? Perhaps by paying in the region of \$10/mo. for unlimited access to music you would never really have owned anyway is the smart thing to do? Perhaps buying CDs and ripping our own (completely legal) MP3s from them is the answer. Of course, in keeping with the theme of this month's issue, backing up your personal music collection is certainly something we should all be doing (though you may still run in to DRM issues).

Then again, maybe karaoke is the wave of the future...

Enjoy the issue,  
Andrew Moore-Crispin

By the time this issue hits the streets, we'll be well under way with a redesign and rethinking of our Web site, [www.hubcanada.com](http://www.hubcanada.com). Come by and have a look. Our new Web strategy will see more and more online-only articles from our excellent HUB: The Computer Paper writers, breaking news, in-depth product reviews and more. All from our uniquely Canadian point of view. We're enhancing the community feel of the site and invite your thoughts. Stop by and let us know what you think... and enter our contest while you're at it.



For more of Andrew's articles, visit the [hubcanada.com](http://www.hubcanada.com) writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)

## News Briefs from



[www.hubcanada.com](http://www.hubcanada.com)

Log on daily for tech news that matters to you

### Tech Teens?

Before you call that kid down the street to do a little network trouble shooting or teach you Boolean search logic, you may want to rethink your stereotypes. Older computer users often consider the younger generation to be tech whizzes. A recent Ipsos Reid survey suggests that's not necessarily the case. A study on teens and the Internet found that youth aged 12 to 17 actually spend less time online than adults and also consider the 'net to be less important in their day-to-day life.

According to the survey, teens tend to focus their online time on just a few activities mostly related to socializing, gaming and music downloading. The survey also suggests that teens are no more well versed in important Internet issues like security and privacy than older users. Teen users tend to stick with the net they know and aren't comfortable navigating too far beyond, the survey suggests.

The time that is spent by teens online is actually rather limited, with 12 to 17 year olds spending, on average, only 13 hours per week on the Internet (compared to a weekly average of 19 hours for online adults), and that number has not increased since Ipsos last measured online teen behaviour in 2004. There are at least a couple of factors that might account for the relatively little time teens spend on online. One is the influence of parents on teens' Internet use – over one-half (54%) of online teens surveyed reported that their parents place time limits or curfews on when they can access the Internet. The other is that only a minority of teens (37%) agree that using the Internet is an important part of their day (compared to 51% of adults).

Online socializing is by far, the overwhelming reason why teens surf the net. The majority of teens surveyed (88%) have participated in an online social activity (compared to 70% of adults) and more than half (59%) visit online social networks or communities a few times a week to daily. Many teens report that the Internet is important to their social life (61%) and, among those who visit online social networks or communities, half (52%) say it is important to their day-to-day life. As a group, teens tend to be aware of online social networks or communities such as Windows Live Space, YouTube, Facebook, and MySpace. In addition to visiting online social websites frequently, teens tend to spend a significant proportion of their Internet time on these sites. For example, teens who are aware of the websites Windows Live Space and YouTube spend a weekly average of 7 hours and 5 hours, respectively, on these sites.

Also of importance to teens on a daily basis is participating in live, online chats and the majority of teens who participate in this online social activity do so on a weekly or daily basis. Teens are heavy users of instant messaging. Three-quarters of teens (74%) have used instant messaging to communicate with friends or family members, making applications such as Windows Live Messenger (formerly called MSN Messenger) indispensable to teens. In addition to socializing online, teens are busy downloading music from the Internet and gaming. Nearly two-thirds of teens (64%) have downloaded digital music or MP3 files, and nearly one-third (30%) of online teens do this often, from a few times a week to daily (compared to 7% of adults). Teens are also avid online gamers, with over half of teens playing against people they know or complete strangers, and visiting gaming websites at least a few times a week or more.

[www.ipsos.ca/reid/interactive/](http://www.ipsos.ca/reid/interactive/)

# MEMORYDEPOT.COM

## Your Memory Experts

The biggest selection  
of memory products in Canada



We provide memory for:



### HOT DEALS



[www.memorydepot.com](http://www.memorydepot.com)  
Please enter "HUB" on your promotion code to get your free delivery. On selected products only.



SONY



Starting at  
**\$870**

**VAIO® NOTEBOOKS / DESKTOPS**



Starting at  
**\$3499**

**SONY® 1080P PROJECTORS**



Starting at  
**\$350**

**SONY® 8MP DIGITAL CAMERAS**

**FREE\* BLUETOOTH**  
**WIRELESS NOTEBOOK MOUSE**



\* With purchase of selected VAIO notebooks.  
Limited time offer, while supplies last.

**SONY® VAIO® NOTEBOOKS**  
**NOW AVAILABLE AT NCIX STORES!**



VAIO  
AR series notebook

The VAIO® AR notebook is powered by Intel's incredible new hafnium based processor technology, faster and more efficient than ever. With super-powerful Intel® Core™ 2 Duo processor T8300 (2.40GHz, 3MB L2 Cache), you'll experience revolutionary performance, unbelievable system responsiveness, and energy-efficiency second to none.

**Browse [www.NCIX.com](http://www.NCIX.com) or visit our four convenient retail locations for the best selection of SONY® VAIO® computer products.**

**NCIX**  
*The Freedom to Choose*

**Tel: 604-451-8682**

Store Hours:

Mon-Fri 9:30am-6:30pm  
Sat 10:30am-5:30pm  
Sun CLOSED

(Richmond Store 10:30am-5:30pm)

**RETAIL LOCATIONS:**



**BURNABY: 5068-B Kingsway**



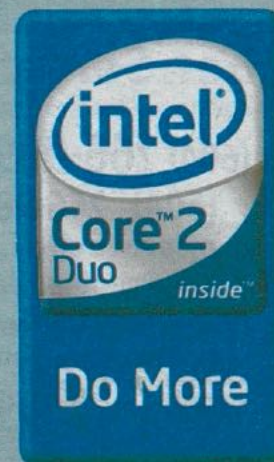
**RICHMOND: #1063-8300 Capstan Way**



**VANCOUVER: 1711 West Broadway**



**LANGLEY: #104-20125 64th Avenue**



\*Limited time offer while supplies last. We reserve the right to limit quantities sold. Price and availability are subject to change without notice. Prices are valid until May 1st, 2008. Intel, Copyright © 2008, Sony of Canada Ltd. © 2008 Intel Corporation. All rights reserved. Intel, the Intel logo, Intel Leap ahead, the Intel Leap ahead logo, Core2 Duo and the Core2 Duo lock logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. © 2008 NCIX.com/Netlink Computer Inc. All Rights Reserved. We are not responsible for any typographical errors.



# Secure Online Backup

*Taking off-site backup to a whole new level*

Breaking up, as Neil Sedaka pointed out more than 40 years ago, is so hard to do. Fortunately, backing up is easy to do, or at least it can be if you use one of the many good online backup services. There are hundreds (if not thousands) to choose from but we will focus on two of the most popular ones: Mozy (Home and Pro) and Carbonite.

There have been numerous articles written over the years on the importance of backing up your data regularly. I've contributed to this glut myself. Rather than revisiting very familiar terrain I will assume that you've read at least one of these articles and are already backing up your data, or at least are thinking about how to do this. You might already be using online backup but looking for a service that does a better job. Or perhaps just costs less.

Why consider online backup at all if you are already backing up to CD, DVD, tape drive, or external drive (including USB thumb drive)? There's a fundamental characteristic that distinguishes online backup from other methods and makes it so valuable: it automatically stores your data offsite. Good backup practice demands that you store, on a regular basis, a complete and current backup offsite so that the

same calamity doesn't strike your computer and backup. Consider fire or water damage, theft, lightning strikes or just common voltage spikes. If your computer and backup media are in the same room or building, there's a chance that both can be lost in the same incident. That's not an issue with online backup since your data is sitting on a redundant disk in a secure data centre somewhere far away, and furthermore that data is mirrored in some other distant location.

One of the lessons the computer industry learned from the Katrina disaster in 2005 was that offsite should mean something more than elsewhere in a city or even in a region. Businesses in New Orleans that backed up to data centres in Mississippi were still at risk of losing their data in Katrina (and in fact some did). Fortunately, vendors of reputable online backup services are aware of this issue and have taken appropriate steps. Short of global thermonuclear war or a large asteroid strike, the data in their care is safe. And in an extreme like that, data back ups are probably going to be low on your list of concerns.

Another advantage of online backup is that it frees you from the need to manage the media you use. Media needs to be tested regularly and rotated, and that can be time-consuming, if it is done at all. Tapes have a surprisingly high failure rate but external drives and optical discs are not immune to sudden failure, either. Many businesses and individuals find out that media has gone bad only when it is necessary to restore data from it. Then there's the issue of cost. If you backup to an external drive, and one is always stored offsite, you'll probably need a total of three, as a minimum.

Online backup does away with these and other concerns. Once it is installed and configured it backs up daily (or more often) without fail, working silently in the background. It is vulnerable only to Internet access problems. However, even intermittent Internet outages won't prevent your data from being backed up. Most online backup services just keep trying until they complete the backup.

So much for generalities. Let's look at the details of two superior solutions.

## Carbonite and Mozy

[www.carbonite.com](http://www.carbonite.com) [www.mozy.com](http://www.mozy.com)

The current version of Carbonite, the one I tested, is designed for Windows XP and Windows Vista. It will not support Windows 2000 or older versions of Windows. A version for the Mac is scheduled for release in mid-2008. Carbonite offers a free 15-day trial if you want to try before you buy.

Although Carbonite can be used in a corporate setting, it is really designed for the SOHO user. Carbonite can back up everything on your hard disk, regardless of size, but by default it backs up your Documents and Settings folder, including documents, settings, photos, email, music and data from other applications such as Quicken and Money. That's exactly what most users want to back up. If your requirements are different, it's easy to change these settings.

Carbonite encrypts your files before they travel on the Internet and they remain encrypted on their servers. As long as you choose a strong password and keep it confidential, your backups will remain secure, even from Carbonite employees.

**Will you survive a PC disaster?**  
Every year, 43% of computer users lose irreplaceable emails, documents, photos and other files.

**Protect yourself with Carbonite Online Backup**

- Completely Automatic - You'll never lift a finger
- Secure and Encrypted - Only you can see your files
- Only \$40.95 Per Year - No matter how much you need to back up

**Risk Free Trial** FREE  
Try Carbonite FREE for 15 days. No credit card required.

Start Your Free Trial

**Selected by Microsoft**  
Microsoft includes Carbonite for Money with every copy of MS Money.

**Real Customers. Real Stories.**  
Maria Vatsopoulos, MA  
"I am so thrilled I wish all my computer experiences had such a happy ending. I installed Carbonite, prepared for the typical installation hassles. Instead, it installed with a few quick clicks. After that, I ignored it, and almost forgot I had even installed it, until I lost an important folder. I got mentally prepared for a few hours of hassles and confusion to try to restore the missing files. Within a few minutes I had them restored to my laptop. Dirt simple!"

Carbonite is also available at [amazon.com](http://amazon.com)

HACKER SAFE  
TESTED DAILY 11-MAY

## MICROTECH Cyber Service

tel: (604) 266-9890  
tech: (604) 266-9851  
[www.microtechpc.ca](http://www.microtechpc.ca)  
e-mail: [info@microtechpc.ca](mailto:info@microtechpc.ca)  
1923 E. Broadway, Vancouver  
(1 block E. of Broadway Station)



### Computer SPECIALS

- Asus All-in-One Motherboard
- 1GB DDR-2 Memory
- 160GB SATA2 Hard Drive
- Onboard Graphics
- LG 18x DL DVD RW w/ software
- Logitech Keyboard & Optical Mouse
- Op533 450W w/ front USB ports

E2160 .....\$299  
E4500 .....\$359

MS-XP Home/Pro \$99/149

### POS / INVENTORY CONTROL SYSTEM

- Retail POS Inventory Control System
- Wholesale & Distribution Management
- Small Manufacturing Raw Material Management

External USB 2.0 Hard Drives  
3.5" 160/250 GB \$89/99  
3.5" 320/500 GB \$119/149

- Laptop / LCD Repair Specialist
- Ink/Toner Refill
- Cell phone Unlock/Repair
- Onsite Computer & Network Service

## SmartPC DIGITAL Surveillance System COMMERCIAL GRADE



In-store demo available

- Intel Pentium dual-core Processor
- 250GB Hard Drive / 1G RAM
- 4-Channels Capture Card w/1 Camera
- 24x7 Recording / Internet Access

ONLY \$499



RESELLERS WELCOME

- Special:**
- 4-Channels 30fps Capture Card with Recording Software \$59
  - 120fps 4 channels Hardware Compression Video Capture Card with MPEG4, H.264 Codec (very low requirement on PC, very clear, commercial grade) \$259





# NexStar

## HARD DRIVE DOCK



**QUICK & EASY**



### OUR COMPLETE LINE OF STORAGE SOLUTION:

- Capacity Up to 2TB
- For 2.5", 3.5" & 5.25" PATA or SATA Device
- USB 2.0, eSATA & Firewire External Interface
- Raid, Backup Software, Power Management Utility



**LAPTOP**



**REMOVABLE**



**DESKTOP**



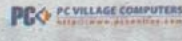
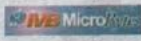
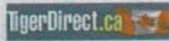
**POWER  
MANAGEMENT**



**NETWORKING**



**OPTICAL DRIVE**



For more information on where to buy please go to  
<http://www.vantecusa.com/wheretobuy.html>

Copyright © Vantec Thermal Technologies. All Rights Reserved. All registered trademarks belong to their respective companies.

**Vantec Thermal Technology, Inc.**  
43951 Boscett Road, Fremont, CA 94538  
Tel. 510.668.0368 Fax. 510.668.0367





**My plants love water; my computer doesn't**

"Before landscaping, I sold backup for six years. I know how frightening data loss statistics are, but with MozyPro I simply don't think about backup. It's the equivalent of having a fleet of trucks and I never have to change the oil. It's effortless to keep my company data safe."

Get Started

**Home Users**

Lots of stuff to back up? Unlimited backup for your home computer for only \$4.95 per month.

Learn More

**Business Solutions**

Need to back up your office? MozyPro is the simple, secure, and affordable backup solution for businesses.

Learn More

**Simple, Automatic, Secure Online Backup**

**Why all the fuss about backup?**  
Chances are you have a lot of important stuff on your computer like financial documents, email, digital photos, music and more. Unfortunately, computers are vulnerable to hard drive crashes, virus attacks, theft and natural disasters, which can erase everything in an instant.

**Insurance for your data.**  
Mozy is a simple and safe way to back up all the important stuff on your computer. A copy of your data is stored in a secure, remote location for safekeeping, so that in the event of disaster your data is still retrievable.

**What makes Mozy so great?**  
Mozy makes online backup possible for everyone with an affordable, secure solution that's easy to use. Don't just take our word for it. Check out the news section to see all the nice awards we have received and what the experts are saying about Mozy.

**MozyEnterprise**

Secure Online Backup For The Enterprise Environment

Learn More

**Award Winning Online Backup**

PC MAGAZINE BEST OF 2007

**Save Your Stuff**

New data backup solutions for your business.

Fortune Small Business (Nov. 07, 2007)

Mozy is fast, simple, and relatively cheap. It gives you another layer of protection in the event of disaster. There is no reason not to use it.

Full Story

**FORTUNE SMALL BUSINESS**

Backups for Business

Online Backup Solutions

Global Pact with GE

Keep Your Data Safe

There is no limit to the amount of data you can backup. Whether you backup 1GB or 500GB, the annual cost is the same: \$49.95. Be aware that there is the potential for exceeding your own ISP's down / upload caps though. There is a practical limit and that is imposed by the speed of a Carbonite backup. Depending on how many gigabytes you

choose to backup, the initial backup can take in excess of a week. Subsequent backups target just the new and modified files and are very fast by comparison. Carbonite monitors your computer for modified files and starts to backup them up immediately. In normal operation, your backup is never more than a few minutes out of date.



David Tanaka

David is one of Canada's most experienced technology journalists and hubcanada.com's resident photography guru. For more than a dozen years as a writer, editor and columnist, he has brought readers the latest tech news and trends. Highly respected for his no-nonsense approach to product reviews and news, David also reports on developments in personal computing, input / output and consumer electronics.

Trusted  
+  
Connected  
+  
Canadian

hubcanada.com

Carbonite uses little of your computer's capacity when it is backing up and just a small part of your Internet bandwidth, so it doesn't interfere with work.

Carbonite adds dots to files and folders in My Computer to indicate their backup status. A green dot on a file means it is backed up, a yellow dot means pending, and no dot means not backed up. A green dot on a folder means everything within it is backed up, and so on.

Restoring files or folders is as simple as a mouse click. If the computer isn't functioning or has been stolen, the data can be restored to another computer by visiting the Carbonite Web site.

Carbonite estimates that about 600-800MB per hour can be downloaded.

Carbonite is an excellent, non-technical backup solution for the individual with typical needs. Its advantages are many and its only major drawback is the time it takes to backup large amounts of data.

Last year Mozy was acquired by EMC, a company well-known for its enterprise backup products. Mozy's online backup products are called MozyHome (for non-commercial use) and MozyPro. MozyEnterprise, an enterprise version that differs only slightly from MozyPro, was just recently introduced.

Prospective Home users can create a 2GB account to try out the service. It is free and never expires. Since Mozy uses advanced data compression, the account can usually store much more than 2GB of files. It may be all the backup capacity you need. If you need more, MozyHome costs \$4.95 per month for an unlimited account. If you sign up for a year, you get a month free. Commercial users need to use MozyPro; it's more expensive than Home but has some additional features of value in a business setting. For one thing, it will backup network drives. The monthly cost is \$3.95 plus \$0.50 per GB. Thus a 10GB account costs \$8.95 per month. As with Home, signing up for a year gets you a free month.

All versions of Mozy are fast, much faster than Carbonite. The performance you get depends partially on how you configure it but it is influenced more by the upload speed of your Internet connection. Bear in mind that upload speeds are much slower than download speeds on most DSL or Cable accounts.

All versions of Mozy are easy to install and to manage. Backups are fast, even the first one. Subsequent backups do only the new or modified files and they are remarkably quick since Mozy uses block-level incremental backup. If a single paragraph is changed in a 20MB report, Mozy needs to transmit only the blocks that have changed and not the entire file.

All versions of Mozy are more technical than Carbonite but they offer greater flexibility as a result. Most users will figure out the Mozy interface and options in a matter of minutes. More technical, in this case, doesn't mean hard to understand.

MozyHome can be scheduled to backup at a set time daily or it can be configured for automatic backup when the computer isn't being used heavily. For example, it can be told to backup no more than six times a day and only when the computer has been idle at least 30 minutes and the CPU is less than 60 per cent busy. Among the many options is the ability to throttle bandwidth use, to adjust backup speed, and to enable support for backing up open files. If backup speed is reduced, backups will take longer but the computer will be more responsive.

MozyHome will backup Outlook files even when the application is in use. MozyPro can do everything that MozyHome can do and much more. It can backup servers; common file servers as well as SQL and Exchange servers.

Restores can be done in various ways, including right clicking on files or folders in My Computer.

#### Recommended strategy

Regardless of the online service you choose, it's a good idea to have a current backup on local media as well. USB drives are ridiculously cheap these days, as low as \$0.20 per GB. As a minimum, backup your most important data daily to a thumb drive. You'll still be able to function if you suffer the double whammy of your computer and your Internet connection going down.

Although I see the appeal of Carbonite, especially for non-technical users, I prefer MozyHome. It is only slightly more expensive, it doesn't require a 12-month commitment, and it much faster and more flexible than Carbonite. For backing up servers in a business, MozyPro is by far the best value I've encountered. Superior solutions are far more expensive.

If you don't care for either Carbonite or Mozy, do not despair. There are hundreds of other solutions to try.

By Issie Rabinovitch



For more of Issie Rabinovitch's articles, visit the hubcanada.com writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)



## News Briefs from



[www.hubcanada.com](http://www.hubcanada.com)

Log on daily for tech news that matters to you

### Vancouver school offers YouTube scholarship competition

Vancouver Film School, Canada's largest post-secondary entertainment arts institution, and YouTube recently announced the Vancouver Film School (VFS)/YouTube "What Matters to You" Scholarship Competition. People from around the world will have the opportunity to share their film, animation, or creative pitch in a three-minute video to win a full-tuition scholarship.

Artists from the 19 regions where YouTube has local sites will be eligible to submit their original videos from March 18 to May 9. VFS will then narrow the field to 10 finalists. Between May 20 and May 27, the YouTube community will vote to pick three winners. On May 30, the winners will be announced and will receive scholarships to VFS worth from \$17,000 up to \$52,750.

Launched in October 2006, the VFS YouTube Channel ([youtube.com/vancouverfilmschool](http://youtube.com/vancouverfilmschool)) has over 17,000 subscribers and is the most subscribed school Channel on YouTube.

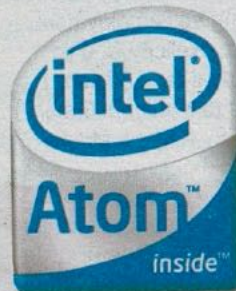
"The goal of the VFS Channel on YouTube is twofold: to entertain the world and to show it what our students can do. We've had phenomenal response from YouTube viewers; they want to know how to come to VFS and we want to help them get here," said Stephen Webster, Director of Marketing at VFS.

"A growing number of emerging filmmakers and artists are channeling their creativity to YouTube, building an audience, and generating interest in their work," said Sara Pollack, community manager for film, YouTube.

The three scholarship recipients chosen by the YouTube community will be able to attend any of the 14 entertainment arts programs VFS offers.

### Intel introduces Atom line of processors

New chip uses the world's smallest transistors



For a certain segment of computer users smaller is better and Intel's new Atom processor family serves them in two ways. Bridging the gap between notebook computers and PDAs are a class of devices Intel calls MID or Mobile Internet Devices. This will be one of the Atom's playing fields along with a new category of simplified and affordable Internet PCs that are due on the market later in the year. The second will be as an Atom based Centrino product.

Intel states that Atom "is based on an entirely new microarchitecture designed specifically for small devices and low power." Exactly how low? Atom has a thermal design power (TDP) specification in 0.6-2.5 watt range, according to Intel, compared to around 35 watts TDP for mainstream Core 2 Duo processors. Atom will run at up to 1.8GHz and maintains compatibility with the Core 2 Duo instruction set. Intel says it is its smallest processor to date. It contains 47 million transistors and 11 Atom processor dies will fit in an area the size of a penny.

The Centrino branded design architecture for notebook computers will be carried through with Atom processors. If you follow Intel's processor

road map, this is the product that previously went under the code name Menlow. The Centrino architecture is built around a trio of chips that are optimized to work together to deliver processing, I/O and graphics and wireless functions to the computer. Intel says the radio and graphics chips are thinner and lighter, in keeping with the new smaller Atom processor.

## DUPLICATE. ARCHIVE. ERASE. TEST. PUBLISH.

### CD/DVD/BD-R PUBLISHERS

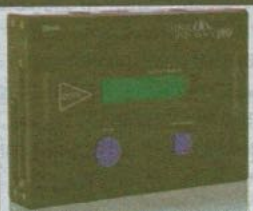


The XR-Series disc publishers are designed for mission-critical applications that require fast and efficient disc burning and printing, rock-solid reliability and professional-quality recorded and printed CDs, DVDs, and Blu-ray (BD) Discs.

Prices quoted before applicable rebates

|   |         |
|---|---------|
| XR-CD/DVD 50 Disc Publisher                 | \$ 3095 |
| XR-Blu CD/DVD/BD 50 Disc Publisher          | \$ 4896 |
| XRP CD/DVD 100 Disc Publisher               | \$ 4626 |
| XRP-Blu CD/DVD/BD 100 Disc Publisher        | \$ 8226 |
| XRn CD/DVD Network 50 Disc Publisher        | \$ 6426 |
| XRn-Blu CD/DVD/BD Network 50 Disc Publisher | \$ 8226 |

### HARD DISK CLONING DEVICES



"...if you're a drive jockey, you'll find the Disk Jockey the greatest thing since mounting rails. Better, actually." CNN Mag.com

The Disk Jockey PRO is the latest in the award winning Disk Jockey line of portable hard disk duplication and diagnostic products. The Disk Jockey PRO was designed specifically for those who spend a lot of time working with computers and computer hard disk drives.

At MDS, we have IDE/PATA, SATA, SCSI, SAS disk drive cloning devices ranging from 1-1 up to 1-59 targets from 1 source.

|   |         |
|---|---------|
| Disk Jockey Pro 1-1 UDMA IDE & SATA Copier        | \$ 449  |
| LM-2 IT Universal HDD Copier with Hard Case       | \$ 699  |
| IM Solo-3 IT 1-2 IDE, SATA & SCSI Copier          | \$ 1999 |
| IM Solo-3 IT 1-2 IDE, SATA & SCSI Forensic Copier | \$ 2495 |

### FLASH MEMORY DUPLICATORS



Introducing the newest members of our flash memory copier family. These affordable and easy to use portable devices are perfect for small to medium production USB, SD, MMC and CF cloning projects. These units include a variety of features including duplication, testing, verification and job logging.

Applications include pre-loading of card for GPS navigation systems, PDA's, Smart phones, Embedded Systems, photo, video and audio digital players and many more.

|   |         |
|---|---------|
| CF400, 1-4 CompactFlash (CF) Copier         | \$ 999  |
| MDS128-USB, 1-8 USB Thumb Drive Copier      | \$ 1999 |
| MDS128-SD, 1-8 USB to Secure Digital Copier | \$ 2189 |
| M6210, 1-10 USB Thumb Drive Copier          | \$ 2900 |

### MEDIA DUPLICATION SERVICES

#### CD Duplication Package Deals

|   |        |
|---|--------|
| 100 CDs with Full Colour Digital Printing | \$ 95  |
| 100 CDs with Full Colour Thermal Printing | \$ 195 |
| 500 CDs with Full Colour Digital Printing | \$ 469 |
| 500 CDs with Full Colour Thermal Printing | \$ 969 |

#### DVD Duplication Package Deals

|  |        |
|--|--------|
| 100 DVDs with Full Colour Digital Printing | \$ 99  |
| 100 DVDs with Full Colour Thermal Printing | \$ 199 |
| 500 DVDs with Full Colour Digital Printing | \$ 495 |
| 500 DVDs with Full Colour Thermal Printing | \$ 995 |

MDS specializes in HIGH SPEED, HIGH VOLUME CD, DVD, and Flash Memory DUPLICATION and REPLICATION. We provide CUSTOM PACKAGING and PRINTING to suit any duplication or replication need you or your clients might have.



Media Duplication Systems

Tel: 1-888-967-1999

Email: [sales@mdsfirst.com](mailto:sales@mdsfirst.com)

Web: [www.mdsfirst.com](http://www.mdsfirst.com)



Media Duplication Systems (MDS) is a leading supplier of media duplication, testing, recovery and computer forensics systems. Our cloning systems are used throughout the world in thousands of IT departments, as well as by the largest law enforcement agencies and the military. We accept Government and Corporate Purchase Orders.



# Tax Time

*Software to make taxes less taxing*

If your taxes are reasonably simple, if your personal financial data is well organized and you like the DIY approach, tax preparation software can be an inexpensive, quick and intuitive way to file your taxes. Thanks to the Canada Revenue Agency's Netfile transmission service that has been open since Feb. 11, sending in your taxes has never been easier... and it avoids that trip to post office as midnight approaches on the day of deadline.

The interview processes included in many tax prep software suites tries to ask the right questions to get the maximum refund or failing that, to minimize the amount you have to pay. They're still no substitute for an astute accountant well versed in tax law when your return is more complex and involves income from multiple sources, pensions and the like.

**GenuTax**  
**GenuSource Consulting Inc.**  
[www.genutax.ca](http://www.genutax.ca) \$34.99, 20 returns  
 Windows only (98+)  
 Where tax preparation software

packages generally make their money with customers rebuying their updates software year over year in order to get the latest Canada Revenue Agency (CRA) changes to the assorted forms and schedules that go in to creating a return, GenuTax does things a little differently. The version of GenuTax you buy for the 2007 tax year can also be used to file your 2008, 2009, 2010... returns. The company releases new version of its software but users aren't required to upgrade and can use the software they already own to file returns going forward. New tax law updates are provided free of charge. When a full software update come down the pipe, users can choose whether or not to upgrade. What you end up paying for is the new features as opposed to the updated tax regulations.

The software uses an interview process to guide you through completing a return. There's also a streamlined interview process for users who have a good existing grasp on which tax subjects relate to them.

With GenuTax, users can file previous year tax returns, back as far as 2003.

These returns must be printed and mailed however as NetFile is not supported by the CRA on previous year returns. If all your returns were filed with GenuTax, it's easy to import previous year returns and line amounts.

GenuTax allows residents of Québec to file returns with the CRA. However, it doesn't yet support the provincial tax return that is to be sent to Revenu Québec.

**QuickTax**  
**Intuit Canada**  
[www.quicktax.ca](http://www.quicktax.ca)  
 \$19.99 - \$79.99 (2 returns)  
 Windows only (2000 +)

All versions of personal QuickTax include only two full returns and up to 18 returns with a net income of <\$25,000. That's probably enough for a primary and spouse return along with any children still living at home. Unless part-time jobs pay a heck of a lot better than I remember. Still, it would be nice to have a few more returns offered to help family or friends file.

It's a user friendly software though, which is probably what makes QuickTax's claimed 3 million users keep coming back year on year. The software uses an interview process and walks users through. It also gives investment guidance for the upcoming tax year to maximize returns. New this year, the "Deduction Toolbox" which highlights deductions you may be qualified for and compiles a list of all the deductions you're claiming.

Of particular interest for small business owners is QuickTax Business Unincorporated which will ask you many of the same questions a good personal business accountant would to help maximize your deductions and write off legitimate expenses.

ImpôtExpert, the French language version of QuickTax helps residents of Québec file to Revenu Québec.

**TaxTron**  
[www.taxtron.ca](http://www.taxtron.ca)  
 \$12.99 (1 return) - \$195 (professional, unlimited personal returns)  
 Windows (XP / Vista) / Mac OS (10.3.9+)

TaxTron claims that users can complete their taxes in as little as 10 minutes. A nice thought and perhaps a realistic one for an individual with a T4 and not much else.

The software offers a step-by-step approach to filing returns and uses virtual forms that look a lot like their real-world counterparts.

Users interested in checking out the software can download it for free and complete their return in full. However, to print or NetFile, a paid license is required. TaxTron Family Pack is the

basic software package that goes beyond just filing one return. It allows for filing of up to five returns for \$24.99. In addition, it allows for free filing of up to 15 returns with a net income of \$30,000 or less. The least expensive package offered for an individual return is \$12.99 and called, appropriately enough, TaxTron Individual. In addition to the one > \$30,000 net income return, users can file up to 19 < \$30,000 returns for friends and family.

If you're a Mac user, short of using the online-only returns option that many of these companies offer, this is just about your only option.

**UFile**  
**Dr. Tax Software Inc.**  
 Online only (UFile.ca): \$15.95 (one return) \$24.95 (family returns)  
 Software (Ufile for Windows): \$19.99 (Personal, 8 returns) - \$29.99 (Plus, 16 returns)

**Windows only (98+)**  
 Dr. Tax Software Inc. claims to have supplied accountants and tax preparation professionals with the tools they need to complete returns.

Its Ufile online tax return can be had for as little as \$15.95 for an individual or \$24.95 for a family, defined as an individual, a spouse and any dependent children. Individuals earning less than \$25,000 per year, full-time students and Canadians over 60 years of age can fill out and file their return at no charge using the online filing option.

Purchasing the Ufile software (Windows only) costs \$19.99 (eight >\$25,000 returns) for the standard version and \$29.99 for the "Plus" version (16 >\$25,000 returns).

Return preparation is through an interview interface and at the end, Ufile's MaxBack refund analyzer claims to give the filer the highest refund possible or, failing that, the lowest payment possible. The Ufile software / online return only deals with personal returns, including self-employment.

Ufile is the only explicitly NetFile approved individual tax software by Revenu Québec ([tinyurl.com/2djghu](http://tinyurl.com/2djghu)).

By Andrew Moore-Crispin



**Multiyear Tax Software for Canadians**  
**Save yourself the paperwork hassles!**

- **Free** annual tax updates
- Up to 20 tax returns per year, no income level limitations or extra fees per return
- Simple, easy to understand interview

**Once ready to file, purchase GenuTax for**  
**\$34.99** plus applicable taxes.

**Take GenuTax for a Test Drive**  
**with our 30 day free trial version.**



**GenuTax is certified for use with the**  
**Canada Revenue Agency's Netfile program**

**[www.genutax.ca](http://www.genutax.ca)**

The Canada Revenue Agency has determined that no piece of consumer software is allowed to generate more than 20 tax returns. All tax software is subject to these limits. While many tax return software options will allow for free returns under a certain income amount, these returns still count toward the 20 total returns as dictated by the CRA.





#160-12111 Bridgeport Rd.  
Richmond, B.C. V6V 1J4  
Tel: (604) 244-0793  
Tech: (604) 244-8793  
Fax: (604) 248-0292  
E-mail: [addax@addax.bc.ca](mailto:addax@addax.bc.ca)  
Mon-Sat 10am-6:30pm  
Sun & Holiday-12pm-4pm

# ADDAX Inc.

[www.addaxcomputer.com](http://www.addaxcomputer.com)

## New Year Special The Lowest price in town

AMD 3000CPU w/ ECS M/B  
Integrated LAN, Audio, Video  
512M DDR Memory, 80G H/D  
LG 18xDVD-RW, 18" ATX Case  
PS/2 Keyboard, Wheel Mouse

**\$189**

Please check our web site [WWW.ADDAXCOMPUTER.COM](http://WWW.ADDAXCOMPUTER.COM) for the latest prices and best deals!

All listed prices reflect 3% cash discount, All system are tested and burned-in for 48 hours before shipping. All price & Spec. are subject to change without notice. Systems are high speed internet ready with 3 years labor & 1 year parts warranty

With system purchase only: Vista Home/Pre/Business/Ultimate...\$96/104/139/179, Win XP-Home/XP-Pro...\$92/134, MS Office 2007 Basic/ SBE/ PRO/Student...\$169/229/299/135, Spy sweeper...\$49.

Norton Antivirus 2008...\$22. Norton Internet Security...\$35. Win 2003 SBE Server w/5 cal...\$489, Win 2003 Server w/5 cal...\$699, \* Extended & 72-Hour Express Warranty available upon request with system purchases \*

### Intel Super Deal

Intel-E2180 Dual Core(2G) \$289  
Intel-E4500 Core 2 Duo(2.2G) \$335

ASUS P5VD2VM MB  
1.0G DDR2 667MHz  
160G 8M 7200rpm Hard Drive  
128MB Video Integrated  
LG 20X Dual Layer DVD-RW  
5.1 Sound Card & LAN Integrated  
PS/2 Keyboard & Wheel Mouse  
17" P4 450W ATX USB Front Case  
450W Speakers  
19" Samsung LCD----- +\$189

### Intel(64bit)-Dream Machine

Intel E2180 Dual Core(2G) \$415  
Intel-E4500 Core 2 Duo(2.2G) \$458

ASUS P5VDC-X MB w/6 USB2.0  
Samsung 1G DDR2 Memory  
320G SATA-II Hard Drive  
Multi-Function Card Reader  
nVidia 8500GT 512M PCI-E (DX10)  
LG 20X Dual Layer DVD-RW  
6 Channel Integrated Audio & Lan  
Logitech Internet Keyboard & Optical Mouse  
17" 400W ATX Quiet Case  
2.1 Speakers w/ SUB  
19" Samsung LCD----- +\$189

### Intel Core 2 Duo-3D

Intel 3.0G (1333Mhz) \$685  
Intel 2.4G(Q6600) Quad \$685

ASUS P5KSE MB w/ 6 USB2.0  
2.0G 800Mhz DDR2 RAM  
320G SATA-II Hard Drive  
Multi-Function Card Reader  
nVidia 8600GT 256M PCI-E w/ TV Out  
LG 20X Dual Layer DVD & CD RW  
Audio & Gigabit Lan On-Board  
Logitech Keyboard & Mouse  
17" ATX Quiet Case  
Logitech R20 Speakers  
19" Samsung LCD----- +\$189

### Intel Core 2 Duo Gamer

3.0G (1333MHz) \$978  
2.4G (Q6600) Quad \$978  
2.66G (Xq9650) Extreme \$1886

ASUS P5K MB (New Version)  
2.0G 800Mhz DDR2 Kit  
500G SATA-II Hard Drive  
Multi-Function Card Reader  
nVidia 9600GT 512M DDR3 PCI-E  
LG 20X Dual Layer DVD & CD RW  
Audio & Gigabit Lan On-Board  
Wireless Keyboard & Mouse  
Antec Sonata III Ultra Quiet Case  
Altech Lansing 5.1 Speakers w/ Remote  
22" Acer X223W LCD----- +\$235

### AMD-----Best Buy

AMD Dual Core 4200 \$279  
AMD Dual Core 5200 \$329  
AMD Dual Core 6400 \$399

ASUS M2NMX MB w/ 6 USB2.0  
1.0G DDR2 667Mhz  
160G 8M 7200rpm Hard Drive  
3D Video Integrated  
LG 20X Dual Layer DVD-RW  
5.1 Sound Card & Lan Integrated  
PS/2 Keyboard & Wheel Mouse  
17" P4 450W USB Front Case  
450W Speakers  
19" Samsung LCD----- +\$189

### AMD Dream Machine

4200 Dual Core \$385  
5200 Dual Core \$435  
6400 Dual Core \$499

ASUS M2N-X MB  
1.0G DDR2  
320G SATA-II Hard Drive  
Multi-Function Card Reader  
nVidia 8500GT 512M w/ TV-Out  
LG 20X Dual Layer DVD-RW  
Audio & Lan On-Board  
Logitech KB & Mouse  
17" ATX Case w/Front USB  
2.1 Spks  
19" Samsung LCD----- +189

### Athlon64Am2-3D & Video

5200 Dual Core Am2 \$529  
6400 Dual Core Am2 \$549  
9600 Quad Core Am2 \$595

ASUS M2N-E Deluxe MB  
2G DDR2 800Mhz  
All-in-One Cardreader  
320GB SATAII HD  
nVidia 8600GT 256M PCI-E  
On Board Surround Sound & Lan  
17" Quiet ATX Case w/Front USB Port  
LG 20xDVD-RW Dual Layer  
Logitech Wireless KB & Mouse  
Logitecg S220 2.1 Spks w/Sub  
19" Samsung LCD----- +189

### AMD SLI Gamer

6400 Dual Core Am2 \$905  
9600 Quad Core Am2 \$949

ASUS M2N-SLI Deluxe MB  
2G DDR2 800Mhz  
All-in-One Cardreader  
500GB SATAII HD  
nVidia 9600GT 512M PCI-E  
8 Channel Digital Surround Sound & Lan  
Antec Sonata-III Ultra Quiet Case  
LG 20xDVD-RW Dual Layer  
Logitech Wireless KB & Mouse  
Altec Lansing 5.1 Spks w/Remote  
22" Acer X223W LCD----- +235

## OUR NEW ADDRESS IS:

**#160-12111 BRIDGEPORT RD, RICHMOND**  
**604-244-0793 OR 604-247-0848**



### Laptop

ASUS Eee PC w/7"/4G---\$348

ASUS M51SN-A1 T5450/250G/3G/512m/15.4"/VPH/WebCam-----\$985  
Toshiba Satellite A200-JA1 - T2330 /1.6G/1GB/160GB/X3100/VPH/15.4"-----\$738  
Acer AS 5920-6389/T5550/160GB/2GB/15.4"/8600GS 256m w/HDMI/VHP-----\$845

1G/2G DDR2-----\$25/39.8

Data Recovery-----Call

### CPUs & Memory

AMD 4200/6400/9600-----69/179/219  
Intel E4500/8400/Q6600-----128/229/258  
256/512MB SDRAM PC-133-----34/49  
512/1.0G DDR-----25/44  
1.0/2.0G DDR2-----21/39.8  
2/4/8/16G USB Drive-----14/22/38/72  
2/4/8/16/32G SD-----19/24/39/69/155  
2/4/8G Compact-----18/ 55/115  
2/4/8G Mero SD-----16/29/69

### Video Card, Sound Card, Spks

nVidia 6200 128m/7600GS 256M AGP-----39/125  
ATI 2600Pro/XT/3850 512M-----99/135/225  
GF 8500/8600GT/9600GT 512M-----69/89/175  
ATI HD 3850/3870 512M/3870x2 1G -189/208/429  
ASUS TV Tuner/External-----49/49  
PCI Sound Card/SB Audigy-----14/31  
5.1External Sound Card-----29  
Logitech X240/X540/Z5500-----38/78/319  
FM Transmitter w/LCD-----19

### Case & GPS & KB/Mouse/Network

350W/450W ATX PS-----19/29  
Antec 850W/CM600W-----196/89  
17" ATX Case/Sonata-3 Ultra Quiet-----34/114  
Holux Bluetooth/USB GPS-----69/59  
PS/2 KB/Optical Mouse-----7/7  
Logitech wireless KB-----29  
Logitech G7/G15-----65/79  
Logitech MX5000/diNOVO-----119/179

### Motherboards

Socket A/478-----65/79  
ASUS P5VD2-VXSE/P5KSE-----54/102  
ASUS M2A-VM HDMI/M2N-SLI-D--79/139

### Upgrade Special Only:

**\$72**

AMD 3000 + ECS MB w/Video,audio,Lan

### Hard Drives

External 250G HD-----\$86  
80G/160G/250G-----44/54/66  
320G/500G/750G-----79/104/159  
1000G-----229  
74G/150G Raptor 10K-----\$149/185  
Laptop HD  
80/120/160/250/320G-----58/64/79/109/145

### Ink/ Toner & Misc

Ink & Toner-----\$5+  
PCI USB2.0 & IEEE Card-----12/19  
PCMCIA USB2.0/IEEE-----19/19  
HDMI to HDMI/DVI-----12/12  
USB Hub/Floppy-----9/22  
2 port USB/PS2 KVM Switch-----35/24  
USB to Bluetooth & HD Adaptor-----9/19  
IDE to SATA/SATA 2 IDE-----17

### Monitors

7"/10" Digital Frame - \$85/\$145  
HDMI to HDMI - \$9  
Viewsonic VA2026W/2035WM-----238/279  
Viewsonic VX1940W/2240W-----245/305  
Samsung 920NW/LG 196WTY-----189/209  
Acer X203/X223/X243-----199/235/355

### CD/DVD-ROM & CD/DVD Writer

LG External 18X DVD-RW-----\$49  
LG DVD-RW Dual Layer-----25.8  
Pioneer DVD-RW-----29  
DVD-RW Lightscribe-----34  
CD-R-----12.5  
DVD-R(25)-----9.5  
DVD-R Dual Layer-----1.5  
DVD-RW-----1.5



# The Social Revisited

*Zune is throwing a party. Maybe people will come this time...*

One day several years back, Microsofties sat around a table — dress code: business casual — and said that if Sony could do it (Playstation), they could too (Xbox).

The Xbox, now in its second generation, is a success... at least in



consumer perception. Microsoft's Entertainment and Devices Division is apparently set to break even in fiscal 2008. A minor detail.

One day a couple of years back, the same Microsofties sat around the same table. Where the wall of whiteboards once held vague sketches of the original Xbox, they now had drawings of digital audio players. "If Apple can do it (iPod), we can too." The Zune, now in its second generation, was not such a success. The first device bearing the name was a 30GB player. It was clunky with restrictive format support and an interesting if ill-used WiFi capability. The second generation, however, has grown up and slimmed down.

Navigation is incredibly simple. Moving between different types of content (video, music, pictures or radio) is super easy. Even wirelessly linking up with other Zunes to share songs (with some very restrictive digital rights management (DRM) in place) is ridiculously easy too. That's an important point because wireless

syncing and sharing is the thing that sets Zune apart from the front-running iPod. That and an FM radio that, while a nice addition, isn't likely to be a key buying feature.

## The medium is the message...

In keeping with Microsoft's (tragically recent) realization that software and user interface in general needs to be simple if you want people to build a personal connection with their personal computers and devices, the Zune software is simple and powerful. Ironically, it has way less feature bloat than iTunes which has become something of a catch-all program. iTunes started out simple and elegant but has become a bloated and oft times buggy pain in the neck. That is exactly the same Microsoft weakness that Apple has exploited in order to gain mind- and market-share.

## Hands on

The updated Zune is a dream to use. The PC-based software that ships with it

is stable, clean, clear and won't necessarily try to take over your entire media life. It links up with the Zune store effortlessly, giving access to 3 million tracks. More than million of these tracks are digital rights management (DRM) free. There's also an all you can eat subscription service that goes for \$14.99 States-side but that yet to be priced here.

A large, bright screen and a battery that lasts for as long as you and literally the best bundled earphones we've ever had the pleasure of using make the Zune a worthy contender for your "digital lifestyle" dollar.

**Microsoft Zune**  
www.zune.net  
80GB  
STBD  
Screen size: 3.2-inch  
Dimensions: 61 x 13 x 110mm (WxDxH)  
Weight: 128g  
Audio formats: AAC, MP3, WMA  
Video formats: WMV, M4V, some MOV

**Sim Star**

Mobile

**\$679.99**



**APPLE  
IPHONE  
16 GB**

**COMING SOON!**



**LG  
KS20**



**NOKIA  
N95 8GB**



**SonyEricsson  
W890**



**LG KU990  
VIEWTY**



**NOKIA  
N82**



**SonyEricsson  
W380**



**Samsung  
P520 ARMAN**



**NOKIA  
N81**



**SonyEricsson  
K660**



**Samsung  
G800**



**NOKIA 8800  
ARTE**



**SonyEricsson  
W960**



**NOKIA 8800  
ARTE SAPPHIRE**



**SonyEricsson  
K850i**



**HTC TOUCH  
CRUISE**



**MOTOROLA  
RAZR V2**



**SonyEricsson  
W910**



**HTC  
TYTN II**

**www.simstarmobile.com**

**GET THIS ULTRA-SLIM DVD PLAYER PDP100**

**FOR ONLY \$59.99 (original price \$129.99)  
WITH PURCHASE OF ANY CELL PHONE!**



**NU-PDP100  
DVD PLAYER**

- 7 inch LCD
- Built-in card reader: supports SD, MMC & Memory Stick
- Audio transfer to car stereo



**NU-WDR700**

- anti-scratch Mirror cover
- advanced slot-in loading design
- ir remote controller

**Global Unlimited Annual Plan**

**For only \$299.88, Get 14 months of  
Unlimited Global calling!**

**Buy 12 months & get 2 months for Free.**

**With Global Unlimited Annual Plan you can make  
unlimited phone calls anytime to anywhere in US,  
Canada, China, Hong Kong and Singapore, plus more  
than 20 countries and regions worldwide!**

**30 day  
Money Back  
Guarantee**

**Our \$299.88 Global Advantage Plan gives you 2 months of  
Global Unlimited Plan Service for Free! \***

**Pay for 12 months at \$24.99/mo... get 14 months of Unlimited Global Plan calling!**

- No Activation Fee (\$29.99!)
- No Service Contract! (If you cancel service, all unused remaining amount will be refunded!)
- 30 day money back guarantee!

**\* a \$60.00 equipment deposit will apply when signing up. The deposit is fully refundable after the equipment is returned if the account is cancelled.**

|  |                        |
|--|------------------------|
| Base Rate .....  | \$24.99                |
| Local Calls, Calls to US & Canada .....                          | Unlimited              |
| International Calling .....                                      | Includes 26+ Countries |
| China Phone Number .....   | Yes                    |
| Calls to China, Hong Kong & Singapore .....                      | Unlimited              |
| Calls from China to US and Canada .....                          | Unlimited              |
| Total Monthly Fees .....   | \$24.99                |
| Total/14 months .....  | \$299.88               |
| <i>(Origin number transferrable with restrictive conditions)</i> |                        |

**Free Advanced Features:**

- China Phone Number
- Caller ID
- Call Waiting
- Call Forwarding
- 3-way Calling

▲ Including US, Canada, China, Hong Kong, Taiwan, Australia, Austria, Belgium, Chile, Denmark, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Malaysia, Netherlands, New Zealand, Norway, Singapore, South Korea, Portugal, Spain, Sweden, Switzerland, United Kingdom, Vatican City.

▲ Except for US, Canada, China, Singapore and Hong Kong, calls to mobile phones in other countries are not included in this unlimited plan. Unlimited calls to special services are not included too.

**Richmond  
Empire Ctr.**  
1455-4540  
No. 3 Rd.  
V6X 4E4  
**(604) 276-9088**

**Richmond  
Aberdeen Ctr.**  
2280-4151  
Hazelbridge Wy.  
V6X 4J7  
**(604) 276-8669**

**Burnaby  
Crystal Mall**  
1212-4500  
Kingsway  
V5H 2A9  
**(604) 436-9003**





<http://www.computraksystem.com> for latest prices and products Tel: (604) 270-6797  
Fax: (604) 270-9161

# CompuTrak System

**Store Hours:**  
Mon - Fri: 11:00-6:30  
Saturday: 12:00-5:00  
Sunday: Closed

## AM2 Sempron System

AMD Sempron (AM2) 3400+  
ASUS M2N-MX SE Motherboard  
512MB DDR2 PC-5300 Memory  
80GB 7200rpm Harddrive  
Integrated 3D Graphics  
3D Sound On-Board  
LG 20x DVD/RW Drive  
Edifier 2.0 Speakers  
ATX case w/ 450W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated 10/100 LAN



Only **\$279**

## AM2 Workstation

AMD Athlon 64x2 (AM2) 4200+  
ASUS M2A-VM Motherboard  
1GB DDR2 PC-5300 Memory  
160GB SATA II 7200rpm Harddrive  
Integrated 3D Graphics  
3D Sound On-Board  
LG 20x DVD/RW Drive  
12-in-1 Card Reader  
Edifier 2.0 Speakers  
ATX case w/ 450W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated Gigabit LAN



Only **\$349**

## AM2 Junior Extreme

AMD Athlon 64x2 (AM2) 4800+  
ASUS M2A-VM HDMI Motherboard  
1GB DDR2 PC-5300 Memory  
320GB SATA II 7200rpm Harddrive  
Integrated 3D Graphics  
3D Sound On-Board  
LG 20x DVD/RW Drive  
12-in-1 Card Reader  
Edifier 2.0 Speakers  
ATX case w/ 450W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated Gigabit LAN



Only **\$409**

## AM2 Ultimate

AMD Athlon 64x2 (AM2) 5000+  
ASUS M3A Motherboard  
2GB DDR2 PC-5300 Dual Channel  
500GB SATA II 7200rpm 16MB  
Radeon HD 2600 Pro 512MB  
3D Sound On-Board  
LG 20x DVD/RW Drive  
12-in-1 Card Reader  
Edifier 2.0 Speakers  
In-Win 17" ATX case w/ 350W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated Gigabit LAN



Only **\$559**

## AM2 Extreme Dual-Core

AMD Athlon 64x2 (AM2) 5600+  
ASUS M2N-E w/ Gigabit LAN  
2GB DDR2 PC-5300 Dual Channel  
500GB SATA II 7200rpm 16MB  
EVGA 8600GT 512MB PCI-E  
3D Sound On-Board  
LG 20x DVD/RW Drive  
1.44MB Floppy Drive  
12-in-1 Card Reader  
Edifier 2.1 Speakers  
In-Win 17" ATX case w/ 350W  
Multimedia Keyboard  
Optical Wheel Mouse



Only **\$659**

## Dual Core Workstation 2

Intel Pentium Dual E2180 1.8GHz  
ASUS P5VD2-MX SE Motherboard  
512MB DDR2 PC-5300 Memory  
80GB 7200rpm Harddrive  
Integrated 3D Graphics  
3D Sound On-Board  
12-in-1 Card Reader  
LG 20X DVD/RW drive  
Edifier 2.0 Speakers  
ATX case w/ 450W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated 10/100 LAN



Only **\$339**

## Core 2 Junior Extreme

Intel Core 2 Duo E4500 2.0GHz  
ASUS P5GC-MX Motherboard  
1GB DDR2 PC-5300 Memory  
250GB SATA II 7200rpm Harddrive  
Integrated 3D Graphics  
3D Sound On-Board  
12-in-1 Card Reader  
LG 20X DVD/RW drive  
Edifier 2.0 Speakers  
ATX case w/ 450W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated 10/100 LAN



Only **\$409**

## Core 2 Extreme Pro

Intel Core 2 Duo E6550 2.33GHz  
ASUS P5KPL-VM Motherboard  
1GB DDR2 PC-5300 Memory  
320GB SATA II 7200rpm Harddrive  
Integrated 3D Graphics  
3D Sound On-Board  
12-in-1 Card Reader  
LG 20X DVD/RW drive  
Edifier 2.0 Speakers  
ATX case w/ 450W  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated Gigabit LAN



Only **\$509**

## Core 2 Ultimate

Intel Core 2 Duo E6750 2.66GHz  
ASUS P5K-VM Motherboard  
2GB DDR2 PC-5300 Dual Channel  
500GB SATA II 7200rpm 16MB  
Integrated 3D Graphics  
3D Sound On-Board  
12-in-1 Card Reader  
LG 20X DVD/RW drive  
Edifier 2.0 Speakers  
In-Win 13.5" case w/350  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated Gigabit LAN



Only **\$599**

## Quad Ultimate

Intel Core 2 Quad Q6600 2.4GHz  
ASUS P5E-VM-DO Motherboard  
2GB DDR2 PC-5300 Dual Channel  
500GB SATA II 7200rpm 16MB  
Integrated 3D Graphics  
3D Sound On-Board  
12-in-1 Card Reader  
LG 20X DVD/RW drive  
Edifier 2.0 Speakers  
In-Win 13.5" case w/350  
Multimedia Keyboard  
Optical Wheel Mouse  
Integrated Gigabit LAN



Only **\$669**

# ASUS Excellent On-the-Go EEE PC Easy to Learn, Work & Play

Call / Check our website for More Details

## ASUS F8SN-A1

Intel Core 2 Duo 1.66  
14.1" WXGA  
Nvidia 9500M GS 512MB  
3GB DDR2 667  
250GB  
DVD-RW  
Wireless N  
Bluetooth  
1.3 MP Camera  
Vista Premium

## ASUS W7S

W/ XP PRO

## Style Mobility

Intel Core 2 Duo 2.2  
13.3" WXGA  
1GB DDR2 667  
120GB SATA  
DVD-RW w/ LS  
Bluetooth  
Camera  
Card Reader  
Wireless N  
Vista Business/XP Pro

## ASUS R1E Tablet

Intel Core 2 Duo 2.4  
13.3" WXGA  
2GB DDR2 667; 160GB SATA  
DVD-RW; 8-in-1 Card Reader  
Wireless N, BT  
Vista Business

FREE CARRYING BAG & MOUSE  
2 YRS GLOBAL/ 1ST YR ACCIDENTAL WARRANTY  
30 DAYS ZERO BRIGHT DOT WARRANTY  
\*Except for eee pc\*

# Specials

## ASUS M50SV

W/ Numeric Keypad  
Intel Core 2 Duo 2.5  
Nvidia 9500M G 512MB  
15.4" WXGA  
3GB DDR2 667  
250GB  
Card Reader  
Wireless N  
1.3MP Camera  
DVD-RW  
Bluetooth  
Vista Premium

## Ultra Mobile

Intel Pentium M 900MHz  
7" LCD Touch Screen  
768MB DDR2 533; 60GB  
Wireless LAN; SD card reader  
1.3MP Camera; XP Tablet

## ASUS R2H

Intel Core 2 Duo 2.5  
Nvidia 8700GT 512MB  
17.0" WUXGA  
4GB DDR2 667  
320GB SATA  
DVD-RW  
Wireless N  
Bluetooth  
1.3 MP Camera  
Card Reader  
Vista Ultimate

## Gaming



## PDA Phone

### P527

-GPS  
-WLAN, USB, BT  
-2MP Camera



Check website for details

## System ASUS Barebone

World Smallest  
Core 2 Duo PC **\$850**



Start From **\$136**

## Asus Nova P22

## Asus V3

LG L1953TX  
2000:1  
5 ms  
**\$203.99**  
Silver color only

ASUS PG221  
1.3MP Camera & Multimedia  
**\$543.99**

LG 196WTY  
**\$196.99**

LG L226WTY  
**\$263.99**

ACER X243WBD  
**\$353.99**



Ridata 52X CD-R  
Spindle of 50  
**\$10.99**

Philips 16X DVD-R  
Spindle of 50  
**\$13.99**

Airlink101 Wireless Router  
**\$33.99**

Fujitsu V1020 Core2Duo 1.6  
15.4" TFT  
Vista BE  
**\$909**

Secure Digital Card Reader  
**\$6.99**

OCZ 2GB 150x SD  
**\$13.99**

ASUS USB Wireless  
**\$26.99**

MSI PR210 AMDX2 1.7  
12.1" TFT  
Vista Premium  
**\$903**

OCZ 2GB MicroSD  
**\$16.99**

OCZ 8GB USB  
**\$42.99**

Vantec NB Cooler  
**\$15.99**

LG E300 Core2Duo 1.66  
13.3" TFT  
Vista Premium  
**\$943**

Altec Lansing BXR1121  
**\$26.99**

Logitech Lx710 Wireless KB & MS  
**\$56.99**

Acer EX5620 Intel T2330  
15.4" TFT  
Vista Business  
**\$649**

Lenovo TS R61 C2Duo 2.0  
15.4" TFT  
Vista Business  
**\$939**  
8934BTU

\*\*Call for price and availability\*\*



\* All systems - 1 year parts & 3 years labour warranty  
\* All Prices Reflect 2% Cash Discount  
\* Government And Corporate Purchase Orders Welcome  
\* Leasing Available OAC  
\* Prices Subject To Change Without Prior Notice

#5 - 11240 Bridgeport Rd. Richmond, B.C., V6X-1T2

All product names, trademarks and registered trademarks are properties of their respective owner



# EXPC Computers

## THE HOME OF GAMERS

1688-4500 KINGSWAY, BURNABY, B.C.  
TEL: 604-433-1662 FAX: 604-433-1662  
WEBSITE: EXPC.CA  
HOURS: MON~SAT 11:00AM~7:00PM  
SUN 12:00PM~6:00PM

INTRODUCING STATE OF THE ART GRAPHIC PERFORMANCE

NVIDIA 9800GX2

ATI EAH3870X2

NVIDIA 9600GT SLI

**#1 PERFORMANCE!**



**EXPC  
EXPC CHOICE**



**BEST VALUE!**



CPU: INTEL Q6600 2.40GHZ

M/B: ASUS STRIKER II FORMULA

RAM: 4GB KINGSTON HYPERX 1066+

O/S: WINDOWS VISTA ULTIMATE X86

3D MARK PERFORMANCE

RESOLUTION: 1280X1024

ANTI-ALIASING: OFF

FILTERING: OPTIMAL

SCORE:

**16320**

CPU: AMD PH-9600 2.33GHZ

M/B: ASUS M3A32-MVP

RAM: 4GB KINGSTON HYPERX 1066+

O/S: WINDOWS VISTA ULTIMATE X86

3D MARK PERFORMANCE

RESOLUTION: 1280X1024

ANTI-ALIASING: OFF

FILTERING: OPTIMAL

SCORE:

**14301**

CPU: INTEL Q6600 2.40GHZ

M/B: ASUS STRIKER II FORMULA

RAM: 4GB KINGSTON HYPERX 1066+

O/S: WINDOWS VISTA ULTIMATE X86

3D MARK PERFORMANCE

RESOLUTION: 1280X1024

ANTI-ALIASING: OFF

FILTERING: OPTIMAL

SCORE:

**13080**

CUSTOMIZED COMPUTERS TO FIT ALL YOUR NEEDS

PRICE QUOTED FOR PARTS ONLY! SOFTWARE & ASSEMBLY EXTRA

### AMD VALUE PACKAGE

CPU: AMD SEMPRON 3400+ 2.0GHZ

RAM: 1GB DDR400

HDD: 80GB IDE 8M 7200RPM

DVD: 20 DVD BURNER IDE

VID: 128MB SHARED

M/B: ECS ALL IN ONE

POW: 500W

CAS: FOXCONN A601 **Save \$50.00**

### QUAD CORE GAMER

CPU: AMD PH-9600 2.33GHZ

RAM: 4GB DDR2 1066 HYPERX

HDD: 500GB SATA2 16M 7200RPM

DVD: 20X DVD BURNER SATA

VID: NV9600GT 512MB

M/B: ASUS M3A

POW: OPTIMAX 550W

CAS: NZXT APOLLO **Save \$200.00**

**NOW ONLY \$188.00**



**NOW ONLY \$898.00**

### INTEL VALUE PACKAGE

CPU: INTEL E2160 1.60GHZ

RAM: 2GB DDR2 667

HDD: 160GB SATA2 8M 7200RPM

DVD: 20X DVD BURNER SATA

VID: 256MB SHARED

M/B: FOXCONN ALL IN ONE

POW: 500W

CAS: FOXCONN A601 **Save \$99.99**

### QUAD CORE PERFORMANCE

CPU: AMD PH-9500 2.23GHZ

RAM: 2GB DDR2 800

HDD: 250GB SATA2 8M 7200RPM

DVD: 20X DVD BURNER SATA

VID: NV8500GT 1GB

M/B: M3A78 EMH HDMI

POW: 500W

CAS: FOXCONN A601 **Save \$149.99**

**NOW ONLY \$248.00**



**NOW ONLY \$599.00**

RECERTIFIED PRODUCTS FOR EVEN MORE SAVINGS

RECERTIFIED ACER NOTEBOOK

**STARTING ONLY  
\$399.00**



RECERTIFIED HARD DRIVES

WD 500GB SATA2 7200RPM

**ONLY \$79.99**

WD 320GB SATA2 7200RPM

**ONLY \$59.99**



RECERTIFIED LCD MONITORS

**STARTING ONLY  
\$139.98**





# EXPC

## NEW EXPC ONLINE ORDERING SERVICE IS NOW AVAILABLE!!

OUR VALUE CUSTOMERS MAY NOW PLACE ONLINE ORDERS AT EXPC.CA  
AND PICK UP AT DESIRED LOCATIONS!  
EXPC OFFERS THREE CONVENIENT LOCATIONS FOR IN STORE PICKUPS!  
MAIN BRANCH: EXPC @ METROTOWN CRYSTALL MALL 1688-4500 KINGSWAY  
BURNABY: EXPC @ 208-4502 NORTH RD.  
RICHMOND: 140-2649 VIKING WAY



### STORE AND PLAY YOUR MULTIMEDIA AND FAVORITE MOVIES ANYTIME!



LG H55N  
20X DVD-R/RW IDE

NOW ONLY **\$24.99**  
SAVE \$10.00



LG GH20N  
20X DVD-R/RW SATA

NOW ONLY **\$25.99**  
SAVE \$10.00



ASUS DRW-1205PT  
5X BLU-RAY READER  
12X DVD-R/RW SATA

NOW ONLY **\$159.99**  
SAVE \$50.00



LITEON DX401S  
4X BLU-RAY READER  
12X DVD-R/RW SATA

NOW ONLY **\$139.99**  
SAVE \$99.00



LITEON LH-2B1S  
2X BLU-RAY R/RW  
12X DVD-R/RW SATA

NOW ONLY **\$329.99**  
SAVE \$50.00



PIONEER BDC-202BK  
5X BLU-RAY READER  
12X DVD-R/RW SATA

NOW ONLY **\$149.99**  
SAVE \$30.00

### BRING YOUR GAMING EXPERIENCE A STEP CLOSER TO REALITY!



EVGA GF7200GS  
256MB PCI-E 16X

NOW ONLY **\$29.99**



PALIT GF8500GT  
1GB PCI-E 16X

NOW ONLY **\$74.99**



XFX GF8800GS  
384MB PCI-E 16X

NOW ONLY **\$149.99**



ASUS GF9600GT  
512MB PCI-E 16X

NOW ONLY **\$169.99**



PNY GF8800GT  
512MB PCI-E 16X

NOW ONLY **\$188.99**



PNY GF9800GX2  
1GB PCI-E 16X

NOW ONLY **\$548.99**



SAPPHIRE X1550  
256MB PCI-E 16X

NOW ONLY **\$29.99**



ASUS EAH3450  
256MB PCI-E 16X

NOW ONLY **\$49.99**



SAPPHIRE HD3650  
512MB PCI-E 16X

NOW ONLY **\$79.99**



SAPPHIRE HD3850  
512MB PCI-E 16X

NOW ONLY **\$159.99**



SAPPHIRE HD3870  
512MB PCI-E 16X

NOW ONLY **\$188.99**



SAPHR HD3870X2  
1GB PCI-E 16X

NOW ONLY **\$399.99**

### ENHANCE YOUR SYSTEM PERFORMANCE WITH ADDITIONAL MEMORY!

OCZ DDR3 1333+ DIMM  
1GB/2GB

ONLY **\$99.99/\$199.99**

OCZ DDR3 1600+ DIMM  
1GB/2GB

ONLY **\$119.99/\$249.99**

TRANSCEND DDR2 800 FBDIMM  
2GB FOR MAC PRO

ONLY **\$89.99**

TRANSCEND DDR2 667 FBDIMM  
2GB FOR MAC PRO

ONLY **\$69.99**

KINGSTON HYPERX 1066+ DIMM  
DUAL CHANNEL 1GBX2

ONLY **\$79.99**

KINGSTON DDR2 667 DIMM  
2GB

ONLY **\$39.99**

ADATA DDR2 667 SODIMM  
2GB

ONLY **\$29.99**

ADATA DDR2 800 DIMM  
1GB

ONLY **\$16.99**

TRANSCEND DDR2 800 DIMM  
1GB

ONLY **\$15.99**

OCZ DDR2 800 SODIMM  
2GB

ONLY **\$39.99**

KINGSTON DDR2 667 SODIMM  
2GB

ONLY **\$49.99**

ADATA DDR 333/400 SODIMM  
512MB/1GB

ONLY **\$18.99/\$29.99**

### ENRICH YOUR COMPUTER EXPERIENCE WITH TRUE COLOUR MONITORS!



BENQ LCD MONITORS  
20" G2000/22" SP222/W24" G20004W

ONLY **\$189.99/\$229.99/\$319.99**



SAMSUNG LCD MONITORS  
19" 920NW/22" 2220WM/24" 245B

ONLY **\$179.99/\$249.99/\$399.99**

### EASY PLUG-AND-PLAY DATA STORAGES



ADATA MICRO-SDHC  
2GB/4GB/8GB

ONLY **\$9.99/\$19.99/\$44.99**

KINGSTON DT100  
2GB/4GB/8GB

ONLY **\$9.99/\$19.99/\$34.99**



TRANSCEND SDHC  
4GB/8GB/16GB

ONLY **\$14.99/\$29.99/\$59.99**

USB SDHC READER

ONLY **\$4.99**

TRANSCEND M3 READER  
25-ALL IN ONE

ONLY **\$9.99**

### SURF ONLINE ANYWHERE IN YOUR HOME!



TP-LINK  
54G WRLS ROUTER

ONLY **\$22.99**



TP-LINK  
54G USB RECIEVER

ONLY **\$9.99**



AIRLINK  
54G WRLS ROUTER

ONLY **\$29.99**



AIRLINK  
54G PCMCIA

ONLY **\$14.99**

### TERMS & CONDITIONS :

AD MUST BE PRESENTED FOR PURCHASE  
PAYMENT BY CASH OR DEBIT ONLY  
LIMITED ONE ITEM PER PERSON  
SOME CONDITIONS MAY APPLY  
WHILE QUANTITIES LAST



# The Battle has Ended, the HD War Continues

*HD DVD, we hardly knew ye...*

Conceived in 2002 and flat-out dead just six years later — a mere 22 months after the North American debut of the first consumer-level HD DVD player — HD DVD was ultimately here for a short time, not a good time. Its failure, and in particular the way it failed (Betamax, in comparison, hung in there against VHS for more than a decade), signals once again that those who adopt early had best be wholly prepared for worst case scenarios — especially when they run gleefully into the midst of an unsettled format war. Hands up if you did jump into the HD DVD pool a tad early. I know I did. I picked up a Toshiba HD-A2 back in early 2007 at the then discounted price of \$380. It made perfect sense at the time.

HD DVD was the first high-def option on the scene (beating Blu-ray by several months), and the few HD-DVD movies I'd seen in electronics stores and friend's living rooms just looked so damned good. Moreover, Blu-ray players were

nearly double the price. The scoundrels! Add in Toshiba's heavy-duty marketing job, and the fact that big-time players such as Universal Studios, Intel, Microsoft, and even... ahem, the adult film industry were behind the technology, and the choice seemed obvious.

## Content killed the video star

So, what went wrong? What killed HD DVD? Consumer confusion, for starters. When good old DVD first appeared a decade ago, it did so in a united front. There were no decisions to be made regarding which type of DVD technology you'd embrace — you either got on board or you didn't. Furthermore, the advantages — and the physical differences — versus VHS were obvious. It was a disc rather than a tape. Its picture was cleaner, its audio crisper. A DVD disc was slimmer and more compact than a VHS tape, and DVD allowed you to instantaneously jump to any chapter of a movie, without enduring rewinds and fast forwards.

When high-definition disc technology made its way to market, it was, in contrast, stuck in the throes of a format firefight. But apart from the obvious choice of HD DVD or Blu-ray, consumers were also smacked over the head with bewildering, high-tech phraseology and news of performance issues in early players. In addition, the real world superiority of high-def discs over traditional DVDs was very much in question. HD discs looked like DVDs, and they didn't really offer much more in the way of operational advantages. Indeed, high def players still load much slower than traditional DVD players.

But to those with high-end TVs, HDMI connection chains, and seven-plus-channel HDMI-equipped audio amplifiers, the experience was mind-melting. The only question — and it was a big one — was whether you'd bet on the right horse. As it turned out, those who put their bucks on HD DVD didn't.

## Off to the races

Blu-ray did have a few apparent advantages from the get go. First, it was more future-proof. Whereas HD DVDs are quite similar to old school DVDs, Blu-ray discs are more revolutionary. Virtually all the key elements are smaller, from the pits in the tracks to the width of the laser that reads them. Data is stored differently too. Ultimately, multi-layer Blu-ray discs can handle 200GB of data versus HD DVDs 60GB. And they're substantially more scratch-resistant, due in no small part to a specially developed coating that HD DVD discs simply can't incorporate.

Still, HD DVD discs were cheaper to manufacture (using, for the most part, existing DVD production methods), and the players themselves were more affordable. HD DVD interactivity was superior, as was its Internet connectivity. As for content providers, the lines appeared to be drawn equally between the two warring factions.

But as the months rolled on, it became clear that content was king. By the time the first Blu-ray players emerged, Sony simply had a better lineup of Hollywood studios behind it. Some studios sat on the fence, but those that made a choice generally looked toward Blu-ray.

Similarly, Blu-ray also gathered a more impressive roster of supporting high-tech firms. To some, it seemed that while Toshiba was hoping, Sony was pushing. To others, it was a simple fact of a better, more futuristic technology

— affordability be damned.

Near the end — that is, in the first two months of 2008 — the snowball of abandonment had gained such momentum that it seemed nothing could stop it.

## Ready for prime time?

According to online industry publications such as TG Daily ([www.tgdaily.com](http://www.tgdaily.com)), prices for Blu-ray players have actually been rising marginally in the weeks surrounding HD DVD's demise. Scoundrels and scallywags!

Moreover, Blu-ray players currently at that low end of the price spectrum are far from state-of-the-art. The first generation of Blu-ray players, which make up the vast majority still being sold (and now deemed as "Profile 1.0") aren't equipped with a lot of the cool stuff of which Blu-ray is capable. Stuff like picture-in-picture, Internet connectivity, storage for downloadable content, and the like. Profile 1.0 players are generally older, potentially less reliable, and incompatible with future firmware upgrades.

Profile 1.1 players, which address the picture-in-picture issue, are now being released. But by the fourth quarter of the year, Profile 2.0 players, which promise to offer the full meal deal detailed above plus an unparalleled level of interactivity, are due. The wait should be worth it.

## Is Blu-ray the ultimate solution?

But how long will Blu-ray dominate the high-def landscape? Perhaps not much longer than the life span of HD DVD. A likely HD DVD successor may well be Internet movie downloads.

It somehow isn't surprising that Toshiba is fully behind the technology now that its HD DVD days have come to an end. In a recent interview with the Wall Street Journal, Toshiba Corp's Chief Officer, Atsutoshi Nishida, said that Toshiba is already developing technologies in the video downloading market and the computer-to-TV link he envisions as being part of the equation.

The Blu-ray/HD DVD battle may be over, but you can expect the war to bring consumers high-def content to continue for some time to come.

By Gord Goble

## 3J Data Recovery

**Tel: 604-323-9859**

### HARD DRIVE DATA RECOVERY

Supporting IDE, SCSI, USB, ZIP interface & RAID array hard drive

#### OS:

Windows,  
Mac,  
Linux, Unix,  
Netware

### OTHER MEDIA DATA RECOVERY

Supporting portable hard disc, mo, USB storage, CD, floppy disc, tape, different digital cameras and their digital cards

### DOCUMENT RECOVERY

Office series of Word, Excel, Access...  
SQL database document,  
Oracle database document...  
Image recovery and video repairing...

### PASSWORD DECODING

File Password  
Operating System Password  
Hard Drive Password

### ERASE DATA BEYOND RECOVERY

To Protect your Confidential and Private Information

**Laptop  
Password  
Recovery is on  
Special!**

**www.3JDataRecovery.com**

a division of 3J Technology International (Canada), Inc.

Business Hours: **Mon ~ Fri 10am ~ 6pm**  
**Sat 1pm ~ 5pm**

5307 Victoria Drive

Vancouver, BC, V5P 3V6

Tel: 604-323-9859 Toll-free: 1-877-323-9815

email: [jjj@intergate.ca](mailto:jjj@intergate.ca)



For more of Gord Goble's articles, visit the [hubcanada.com](http://hubcanada.com) writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)





# VASTECH

3967 Main Street. Van, BC V5V 3P3

TEL: 604-872-4245  
TEL: 604-872-4215

Mon - Fri: 10:30AM-7:00PM / Saturday: 11:00AM-6:00PM / Sunday & Holiday: Closed

More Saving Please Visit: [www.vastechcomputer.com](http://www.vastechcomputer.com)

Windows Vista OEM Software Purchase With system only: Office  
Vista Home Basic / Premium (32bit) / (64bit) ---\$95 / \$105 / \$110 / \$120  
Vista Business / Ultimate (32bit) / (64bit) ---\$145 / \$200 / \$149 / \$200  
Win XP Home / Pro / 64bit / Media Centre Edition ---\$95 / \$145 / \$169 / \$159  
03 Server (STD / SBE) w/ 5user/ + 5user ---\$699 / \$455 / \$175 / \$425  
Office 2007 Basic / SBE / Pro(NO CD) ---\$169 / \$235 / \$299  
Office 2007 Home & Student Box (3 users) ---\$129  
Kaspersky Anti-Virus / Internet Security ---\$28 / \$35  
Norton 08 Anti-Virus / Internet Security ---\$25 / \$35  
McAfee 08 Anti-Virus / Internet Security ---\$16 / \$20

## AMD Micro PC Quad-Core

AMD Phenom™ 9500 Quad-Core 2.2G  
Asus M2A-VM Motherboard  
2 GB DDR-II 800 (PC6400) RAM  
S-ATA-II 250GB (16M) 7200rpm HDD  
LG 55N 20x DVD-RW with Software  
Integrated Graphics + PCI-Express  
Upto 10x USB2.0 / Giga-Lan  
High Definition Audio 6-channel  
TK-8330B Micro ATX Case  
Thermaltake 430W Power Supply



**\$499**

## Raid 5 Server: Intel Q6600--\$999

Intel CPU Q6600 2.4GHz FSB1066MHz 8MB L2 Cache  
ASUS P5M2-M Server Motherboard / LG 55N 20x DVD-RW  
4 GB DDR-II PC5300 667 RAM / 1.44MB FDD  
S-ATA-II 1500GB (500g x3) 7200rpm (16M) HDD Raid5  
AQ46 Case with 120 x 120 mm Case Fan  
Cooler Master Extreme 650W Power Supply

**RAID 5**

## Intel Micro PC Quad-Core

Intel Core 2 Quad Q6600 CPU  
Asus P5N-MX Motherboard  
2 GB DDR-II 800 (PC6400) RAM  
S-ATA-II 250GB (16M) 7200rpm HDD  
LG 55N 20x DVD-RW with Software  
Integrated Graphics + PCI-Express  
Upto 10x USB2.0 / Giga-Lan  
High Definition Audio 6-channel  
TK-8330B Micro ATX Case  
Thermaltake 430W Power Supply



**\$549**

## AMD Value

AMD Sempron (AM2) 3400+ (1.8G) ---\$215  
AMD Athlon64 x2 (AM2) 4200+ (2.2G) ---\$255  
AMD Athlon64 x2 (AM2) 4400+ (2.3G) ---\$265

ECS Geforce6100 AM2 PCI-Express  
1 GB DDR-II 667 (PC5300) RAM  
S-ATA-II 160GB (8M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Integrated 3D Graphics + PCI-Express  
USB2.0 / Integrated LAN & Audio  
350W Tower Case w/ USB + Audio Front



## AMD Power

AMD Athlon64 x2 (AM2) 4800+ (2.5G) ---\$349  
AMD Athlon64 x2 (AM2) 5200+ (2.6G) ---\$379  
AMD Athlon64 x2 (AM2) 6000+ (3.0G) ---\$439

Asus M2N-MX se AM2 PCI-Express  
2 GB DDR-II 667 (PC5300) RAM  
S-ATA-II 250GB (16M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Nvidia EN7200GS 256MB DDR2, DVI  
USB2.0 / Integrated LAN & Audio  
400W Tower Case w/ USB + Audio Front



## AMD Gamer

AMD Athlon64 x2 (AM2) 6000+ (3.0G) ---\$559  
AMD Athlon64 x2 (AM2) 6400+ (3.2G) ---\$579  
AMD Phenom Quad-Core 9500 (2.2G) ---\$599

ECS A780GM-A AM2 PCI-Express  
2 GB DDR-II 800 (PC6400) RAM  
S-ATA-II 320GB (16M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Nvidia 8500GT TOP 256MB DDR3, DVI  
USB2.0 / Integrated LAN & Audio  
420W Tower Case w/ USB + Audio Front + 5x Case Fans



## AMD Extremer

AMD Athlon64 x2 (AM2) 6400+ (3.2G) ---\$749  
AMD Phenom Quad-Core 9500 (2.2G) ---\$769  
AMD Phenom Quad-Core 9600 (2.3G) ---\$809

Asus M2N-SLI AM2 PCI-Express  
2 GB DDR-II 800 (PC6400) RAM  
S-ATA-II 500GB (16M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Nvidia 9600GT 512MB DDR3, DVI  
USB2.0 / Integrated LAN & Audio  
Cooler Master 650W / Tower Case w/ USB + Audio Front



## Intel Value

Intel Pentium4 Dual Core E2160 (1.8G) ---\$259  
Intel Pentium4 Dual Core E2180 (2.0G) ---\$269  
Intel Core 2 Duo E4500 (2.2G) 800FSB ---\$319

ECS P4M900T-M Motherboard  
1 GB DDR-II 667 (PC5300) RAM  
S-ATA-II 160GB (8M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Integrated 3D Graphics + PCI-Express  
USB2.0 / Integrated LAN & Audio  
350W Tower Case w/ USB + Audio Front



## Intel Power

Intel Core 2 Duo E4500 (2.2G) 800FSB ---\$399  
Intel Core 2 Duo E6550 (2.33G) 1333fsb ---\$449  
Intel Core 2 Duo E6750 (2.66G) 1333fsb ---\$469

Asus P5GC-MX/1333 PCI-Express  
2 GB DDR-II 667 (PC5300) RAM  
S-ATA-II 250GB (16M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Nvidia EN7200GS 256MB DDR2, DVI  
USB2.0 / Integrated LAN & Audio  
400W Tower Case w/ USB + Audio Front



## Intel Gamer

Intel Core 2 Duo E6750 (2.6G) 1333fsb ---\$599  
Intel Core 2 Duo E8400 (3.0G) 1333fsb ---\$649  
Intel Core 2 Duo Q6600 (2.4G) 1066fsb ---\$669

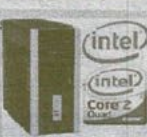
Gigabyte GA-P35-S3G PCI-Express  
2 GB DDR-II 800 (PC6400) RAM  
S-ATA-II 320GB (16M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Nvidia 8500GT TOP 256MB DDR3, DVI  
USB2.0 / Integrated LAN & Audio  
420W Tower Case w/ USB + Audio Front + 5x Case Fans



## Intel Extremer

Intel Core 2 Duo E6750 (2.6G) 1333fsb ---\$759  
Intel Core 2 Duo E8400 (3.0G) 1333fsb ---\$809  
Intel Core 2 Duo Q6600 (2.4G) 1066fsb ---\$829

Asus P5K-SE LGA775 PCI-Express  
2 GB DDR-II 800 (PC6400) RAM  
S-ATA-II 500GB (16M) 7200rpm HDD  
LG DVD-RW 20X +/- Dual Layer  
Nvidia 9600GT 512MB DDR3, DVI  
USB2.0 / Integrated LAN & Audio  
Cooler Master 650W / Tower Case w/ USB + Audio Front



All system have a 3 year labor & 1 year parts limited warranty. Price & availability are subject to change without notice. All trademarks & brands are properties of their owners. All advertised prices reflect 3% cash or interac discount. We reserve the right to correct typographical errors.

USB Drive 1GB / 2GB / 4GB / 8GB  
\$7.99 / \$14.99 / \$24.99 / \$43.99

IEEE 1394 Adapter Card  
3 ports (PCI to IEEE1394)  
with one of 4 to 6 pin  
\$9.99

Three kind of ports. 1 eSATA outside  
2 SATA inside and 1 Ultra 133 IDE  
Supports RAID 0, RAID 1  
\$17.99

USB to IDE 2.5" or 3.5" HDD  
& S-ATA HDD Adapter (3in1)  
\$13.99

POWERDATA USB 4 PORTS 2.0 HUB  
WITH AC/DC POWER ADAPTER  
\$9.99

PATRIOT 2GB MICRO/MINI/SD  
3 IN 1 CARD (60x Speed)  
\$19.99

Asus 16X DVD Rom (Black)  
OEM WITH OUT SOFTWARE  
\$14.99

LG GSA55N 20X IDE DVD-RW  
WITH SOFTWARE (IDE)  
\$25.50

LG GGC-H20L Blu-Ray & HD  
(SATA / LIGHTSCRIBE)  
\$169.99

ASU WL WL-500W 802.11N  
WIRELESS N ROUTER  
\$109.99

Asus WL-130N 802.11b/g/n  
Wireless Adapter (PCI)  
\$69.99

ASUS SILENT SQUARE CPU  
Cooling Fan for AMD & Intel  
\$45.99

ECS P4M900T-M Motherboard  
or  
ECS GF6100SM-M Motherboard  
\$45.99

Logitech DX-250  
Desktop Combo (OEM)  
\$12.99

Logitech EX110 Cordless  
Desktop Combo (BOX)  
\$29.99

LOGITECH EASYCALL DESKTOP KB  
+ LASER MOUSE COMBO  
\$66.99

MS WIRELESS LASER DESKTOP6000  
(Wireless Keyboard + Wireless Mouse)  
\$49.99

Antec 3.5" HDD Enclosure +  
S-ATA-II 250G (16MB) HDD  
\$86.99

Nexstar 2.5" HDD Enclosure +  
S-ATA-II 160G (8MB) HDD  
\$86.99

ECS GEFORCE6100SM-754  
+ AMD Athlon 3200+ CPU  
\$69.99

HP DVD-R 16X 4.7Gb  
50 pack in Cake Box  
\$15.85

RIDATA DVD-R 16X 4.7Gb  
50 pack in Cake Box  
\$13.95

HP LightScribe DVD-R 16X  
4.7Gb 15 pack in Cake Box  
\$14.99

RIDATA CD-R 52X 700MB  
50 pack in Cake Box  
\$9.88

MSITV@anywhere PLUS TV/FM Tuner PCI  
Card with Remote Control (Vista Ready)  
\$33.99

Evga Nvidia Geforce 7200gs  
256M DDR3 PCI-EXPRESS  
\$32.99

ASUS EN8800GT / HTDP/  
512M DDR3 PCI-EXPRESS  
\$247.99

ASUS EN9600GT / HTDP/  
512M DDR3 PCI-EXPRESS  
\$177.99

ASUS EN8600GTS / HTDP/  
256M DDR3 PCI-EXPRESS  
\$143.99

ASUS EN8600GT / HTDP/  
256M DDR3 PCI-EXPRESS  
\$103.99

ASUS EN8500GT TOP/HTP/  
256M DDR3 PCI-EXPRESS  
\$78.99

ASUS EAH2600XT / HTDP/  
256M DDR3 PCI-EXPRESS  
\$99.99

ASUS N7600GS Silent / HTD/  
256M DDR AGP8X W/ TV-OUT  
\$95.99

ASUS AH2600Pro / HTDP/  
512M DDR AGP8X/TV-OUT  
\$109.99

WD 1000GB 7200rpm  
S-ATA-II (16MB) HDD  
\$217.99

Antec SonataIII with  
500W Power Supply  
\$104.99

Cooler Master Xtreme  
650 W power supply  
\$75.99

Thermaltake TR430  
430 W power supply  
\$35.99

Wireless Camera  
(Audio & Video)  
\$43.99

ANTEC ATX Power  
Supply TESTER  
\$13.99

Targus 180W Universal Notebook Power  
compatible with most of today's high  
powered 17" desktop replacement notebooks  
\$49.99

Rediton 1024MB DDR-II  
667Mhz PC5300 RAM  
\$19.99

Brother 465CN (6 in 1)  
Printer, Copier, Scanner  
Fax, PC Fax, PH Capture  
\$88.99

Epson CX4450 (3 in 1)  
Printer, Copier, & Scanner  
ALL in one color printer  
\$56.99

Brother HL2030 17ppm,  
2400 x 600 dpi, 8MB,  
Laser Printer  
\$66.99

Smallest scanner for business card  
\$56.99

Headset with Microphone  
\$9.99

25ft HDMI to HDMI Cable  
\$28.99

25ft DVI to DVI Cable  
\$25.99

DUAL CHARGING DOCK  
w/ 2x BATTERY FOR Wii  
\$25.99

TRICOD DPFLCD10K2 10-inch LCD Picture  
Frame, Supports: CF,MS,SD,MMC,XD  
\$135.99

ASUS F3SV-B2 T7500 PM965 VHP 1GB DDR2  
+1GB TM 160GB 15.4" WSXGA+ 8XDVD RW LS  
GF6800M Video / Microsoft Vista Home Premium

**Web Special**  
ASUS EEE PC 4G SURF-PW Pearl White T7 LCD,  
512MB DDR2, 4GB SSD STORAGE, 10/100 LAN /  
Wireless 802.11B/G / Linux Preloaded/ 3x USB2.0  
(XP Compatible, drivers included) / NO Web Camera

**Web Special**  
MSI VR600-212CA Intel® Core Duo Processor T2450  
2MB L2 cache, 2.0GHz, 667MHz / 1GB (1x 1gb) DDR2  
RAM / 120GB, 5400PRM SATA / 15.4" WXGA Glossy  
DVD+R / Wireless 802.11B/G / Web Camera / CVHP

**\$738.99**

MSI-S262X-644CA Intel® Core Duo Processor T2080  
1.73GHz, 533MHz FSB, 1MB L2 / 12.1" WXGA TFT  
1GB DDR2 Memory / 120GB HDD / DVD-RW / LAN  
and modem Module / Wireless 802.11B/G / XPH

**\$788.99**

ASUS PW191 19" wide-screen TFT LCD,  
1440x900 native resolution, 600:1 contrast ratio  
8ms Response Time, VGA, Height Adjustment  
& ZBD (Zero Bright Dot) + 2W x 2 Speaker

**Web Special**  
PHILIPS-190CW7CS 19" wide-screen TFT LCD  
1440x900 native resolution, 3000:1 contrast ratio,  
5ms Response Time, VGA / DVI, Silver Color

**\$199.99**

PHILIPS-190S7FB Square Screen 19" TFT LCD,  
1280x1024 native resolution, 2500:1 contrast ratio,  
8MS Response Time, VGA / DVI, Black Color

**\$199.99**

SAMSUNG 931BW 19" wide-screen TFT LCD,  
1440x900 native resolution, 2000:1 contrast ratio,  
2MS Response Time, VGA / DVI Black Color

**\$209.99**

Acer X193W - 19" wide-screen TFT LCD,  
1400x900 native resolution, 2000:1 contrast ratio,  
5MS Response Time, VGA, Black Color

**\$185.99**

Acer X223W - 22" wide-screen TFT LCD,  
1680x1050 native resolution, 2500:1 contrast ratio,  
5MS Response Time, VGA / DVI Black Color

**\$233.99**



# In the Lab: Network Attached Storage Drives

*Easy file serving at home or the office*



## In the Lab

For the complete In the Lab article, including hands-on impressions of the NAS drives listed here, visit [www.hubcanada.com](http://www.hubcanada.com) and click on the In the Lab feature box on the homepage

Consumer appetite for storage is insatiable. In the days of high-def video and other, as yet undreamed digital content, it doesn't look like it will be satiated any time soon.

Terabyte drives (1,000GB) are the latest answer to our rapidly expanding personal storage needs.

Just so I can make it in the annals of history and people that really should know better than to make predictions about how much is enough when it comes to computing power or storage, "I can't see anyone ever needing more than a terabyte of storage."

In truth, we'll figure out a way to fill 1TB without too much difficulty and

we'll start wistfully waiting for petabyte drives (1,000TB or 1,000,000GB) to come along.

### Network shares vs. NAS drives

Multiple computers connecting to a central home network is an excellent way to share Internet access among PCs. The traditional home network offers limited file sharing across the network too. For example, in Windows, the central home PC can share its "My Pictures" (or other) folder on the network so that anyone with connection privileges can access the folder across the network. It's far from a perfect solution though. The PC with the shared

folder or folders must always be on (and not hibernating) or the shared folder disappears from the network. There's also a limit to how much users can realistically offer up to be used as network storage and some security issues are introduced when offering up portions of your computer on the network.

Enter NAS or network attached storage. NAS is an ideal solution for shared storage across a home network. NAS solutions generally offer up to 1TB and beyond of shared storage, perfect for sharing and streaming the family's digital content whether a shared music or video collection, family pictures or home movies. NAS drives are also ideal when used as a central back-up facility for computers on the network; many offer simple back-up utilities and in some cases, one-touch backup.

Since your NAS drive runs independently from the computers that access it, any new PCs that enter the home can access the shared storage and any important data held there. For Mac and PC users, it's a simple process. (See sidebar "Mapping a networked share as a virtual drive.")

For Linux users, there's some terminal bashing to be done.

files large or small across the network. However, as they are a network resource, some applications may not be able to use them directly. For example, if your entire music collection is housed on a network drive, you may not be able to access the music directory directly as you would with a physical drive. That is to say, your audio player of choice may not be able to add songs from the network drive to your playlist. Ditto your video player or favourite photo organization software.

Many NAS drives will auto configure computers using a setup disc to map the network share as a physical drive. If not though, mapping a shared drive to act as a physical one in your PC is easy under Windows or Mac (see sidebar).

### Networked vs. Direct

Anecdotal evidence suggests that the average consumer looking to expand their storage possibilities without cracking open their PC case will opt for direct storage as opposed to networked storage. Whether this is because direct is easier to set up (though in fairness, networked is very simple too) or because of the price point difference is not clear. Plugging in a USB or FireWire cable seems a lot less intimidating than an Ethernet cable.

### Network vs. physical drives

Network drives are useful for sharing

**EVER**  
Corporation



Canada's Source for  
Power and  
Protection in  
Portable Electronics  
[www.evercorp.com](http://www.evercorp.com)



Notebook Computer  
Batteries & AC Adaptors

Digital Camera  
& Camcorder Batteries  
and Chargers

iPod, PDA, Nintendo DS  
and Sony PSP Batteries

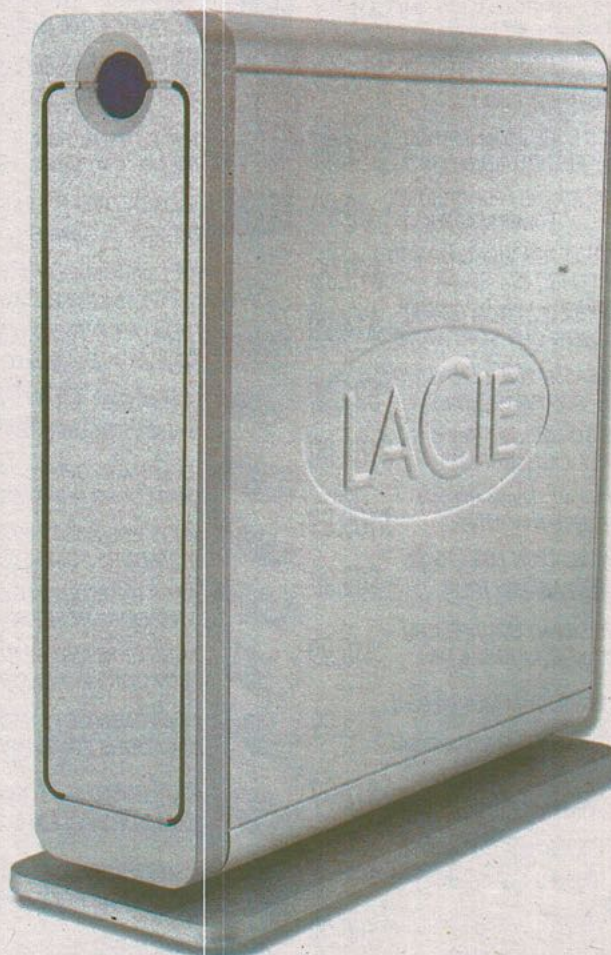
Rugged Cases for iPods,  
PDAs and Smartphones  
by Otterbox

UPS Batteries and  
Battery Kits



Call 1.800.668.0131 - email us at [sales@evercorp.com](mailto:sales@evercorp.com)  
or visit [www.evercorp.com](http://www.evercorp.com) to place an order!  
Wholesale and Retail Inquiries Welcome

LaCie Ethernet Disk mini Home Edition





LaCie Ethernet Disk mini Home Edition  
[www.lacie.com](http://www.lacie.com)  
 \$249  
 Capacity: 500GB  
 Drive speed: 7200rpm  
 Ethernet: Gigabit  
 Data transfer rates: 10 / 100 / 1000 Mbps  
 USB ports: 1  
 Dimensions: 4.4cm x 16.6cm x 17.3cm  
 (WxHxD)  
 Windows, Mac OS X

Buffalo LinkStation EZ  
 LS-L500GL  
[www.buffalotech.com](http://www.buffalotech.com)  
 \$199  
 Capacity: 500GB  
 Drive speed: 7200rpm  
 Ethernet: Gigabit  
 Data transfer rate: 10 / 100 / 1000 Mbps  
 USB ports: N/A  
 Dimensions: 20.6 x 16.2cm x 4.6cm (WxHxD)  
 Windows, Mac OS X

Maxtor Shared Storage II  
 STM310004SDAB0G-RK  
[www.maxtor.com](http://www.maxtor.com)  
 \$219  
 Capacity: 1TB  
 Drive speed: 7200rpm  
 Ethernet: Gigabit  
 Data transfer rate: 10 / 100 / 1000 Mbps  
 USB ports: 2  
 Dimensions: 13.6cm x 9.8cm x 21.7cm  
 (WxHxD)  
 Windows, Mac OS X

Linksys Network Storage System with 2 Bays  
 NAS200  
[www.linksys.com](http://www.linksys.com)  
 \$149  
 Capacity: Variable  
 Drive speed: Variable  
 Ethernet: Megabit  
 Data transfer rate: 10 / 100 Mbps  
 USB ports: 2  
 Dimensions: 17cm x 11.3cm x 19.5cm  
 (WxHxD)  
 Windows

## Mapping a networked share as a virtual drive

Tips for mounting network drive as physical - Windows and Mac

### Windows:

1. Navigate to the network resource you wish to map as a virtual drive (i.e. My Network Places, choose Entire Network, Microsoft Windows Network and the domain you wish to use). This also works with online resources.

2. Right click the shared drive or folder and choose Map Network Drive.

3. Choose a drive letter. Virtual drives default to Z: and work back toward A:. You can use any unassigned drive letter though.

4. Click Finish and your new virtual drive will open.

### or

1. Open My Computer, click on Tools in the menu and choose "Map Network Drive"

2. Choose a drive letter in the top pull-down menu

3. Click Browse to find the network resource you wish to map

4. Click Finish and your virtual drive will open

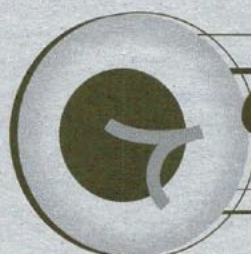
### Mac OS X

1. In the Finder click on GO and select Connect to Server

2. Enter the address of the resource you are mapping (i.e. \\HomeNetwork\Shared\_Music). This also works with online resources.

3. Enter your domain name and password for authentication.

4. Your virtual drive will now appear on the desktop and in the file navigation sidebar.



## Generic Technology

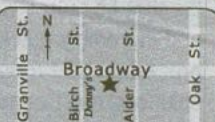
### Computer Sales & Services

[www.genericcomputer.com](http://www.genericcomputer.com)

1266 West Broadway, Vancouver, B.C. V6H 1G6 (Between Oak & Granville)

tel: (604) 731-1218

fax: (604) 731-1273



| E2160 Dual Core   | E4500 Core 2 Duo   | E6550 Core 2 Duo   | Q6600 Core 2 Quad  |
|---|--|--|--|
| Asus P5GC-MX Motherboard<br>1G PC5400 DDR2 RAM<br>160GB (7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>Intel Extreme 3D Graphics<br>Keyboard, Opt. Mouse & Speakers<br><b>\$289</b> | Asus P5KPL-VM Motherboard<br>1G PC5400 DDR2 RAM<br>320GB (S-ATA 7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>Intel X3100 Graphics (Up To 256MB)<br>Logitech Keyboard & Opt. Mouse<br>Power Amplified Speakers<br><b>\$399</b>           | Asus P5K SE Motherboard<br>2G PC5400 667 DDR2 (D-Channel)<br>320GB (S-ATA 7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>Geforce 7300GT 256MB Video<br>Antec NSK4480 case<br>Logitech Keyboard & Opt. Mouse<br>2.1 Speakers w. Subwoofer<br>+ \$140 Upgrade to GF 9600GT 512MB DDR3 Video<br><b>\$599</b> | Asus P5K-E Wifi Motherboard<br>2G PC6400 800 DDR2 (D-Channel)<br>500GB (S-ATA 7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>Geforce 8500GT 512MB Video<br>Antec Sonata III 500W case<br>Logitech Key, Mse & S-220 Speakers<br>Raid, ESATA, Firewire & Wireless<br>+ \$110 GF 9600GT 512MB DDR3 Video<br><b>\$839</b> |
| Sempron 3200+   | Athlon64x2 4200+   | Athlon64x2 6000+   | Phenom 9500 Quad   |
| Asus M2V-MX Motherboard<br>1G PC5400 DDR2 RAM<br>160GB (7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>S3 3D Graphics O/B<br>Keyboard, Mouse & Speakers<br><b>\$239</b>              | Asus M2A-VM HDMI M/B<br>1G PC5400 DDR2 RAM<br>320GB (S-ATA 7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>Radeon X1250 Graphics O/B<br>Logitech Keyboard & Opt. Mouse<br>Power Amplified Speakers<br>HDMI, Firewire, HDTV<br><b>\$329</b> | Asus M2NE NF570 Motherboard<br>2G PC6400 800 DDR2 (Dual-Channel)<br>500GB (S-ATA 7200rpm) H/D<br>20x D-Layer DVD-/+RW<br>Geforce 8500GT 512MB<br>Antec NSK4480 Case<br>Logitech Keyboard & Opt. Mouse<br>Logitech S-220 2.1 Speakers<br>+ \$110 GF 9600GT 512MB DDR3 Video<br><b>\$649</b>         | Asus M3A78-EMH Motherboard<br>2G PC6400 800 DDR2 (Dual-Channel)<br>1TB (2x 500GB) (7200rpm) H/D - Raid<br>20x D-Layer DVD-/+RW<br>Antec NSK4480 Case<br>Logitech Keyboard & Opt. Mouse<br><b>\$699</b>   |

### Software

Windows XP Home / Pro / Vista Basic / Business / Ultimate (OEM) \$109 / \$149 / \$109 / \$159 / \$219 \*\* with System Purchased ONLY \*\*  
 MS Office 2007 Basic / SBE ..... \$169 / \$239  
 All systems come with 1 year parts & 2 years labour warranty

### Hot Deals from Notebook Specials!



#### Asus 7" Eee PC Notebook

|              |                           |        |
|--------------|---------------------------|--------|
| Eee - 4GSURF | 4GB - 512MB               | \$ 349 |
| Eee - PC701  | 4GB - 512MB - Camera      | \$ 399 |
| Eee - PC701  | 4GB - 512MB - Camera - XP | \$ 479 |
| Eee - 8G702  | 8GB - 1GB - Camera        | \$ 499 |

|                           |   |         |
|---------------------------|---|---------|
| Acer Aspire 5315-2013     | Celeron 1.86 - 1GB - 120GB - DVD±RW - Vista Basic - 15.4"                                   | \$ 499  |
| Acer Aspire 5715-4740     | Dual Core 1.6GHz - 1GB - 160GB - DVD±RW - Home Premium - 15.4"                              | \$ 599  |
| Acer Externsa 5620-4382   | Dual Core 1.6GHz - 1GB - 120GB - DVD±RW - Vista Business / XP Pro - 15.4"                   | \$ 659  |
| Acer Aspire 7720-4030     | Dual Core 1.6GHz - 1GB - 160GB - DVD±RW - Home Premium - 17" - Camera                       | \$ 750  |
| Acer Travelmate 5720-6340 | Core2Duo 2GHz - 1GB - 120GB - DVD±RW - XP Pro - 15.4"                                       | \$ 799  |
| Toshiba Sat U300-AY1      | DualCore - 1.6GHz - 1GB - 160GB - DVD±RW - Home Premium - 13.3" Camera                      | \$ 800  |
| Acer Extensio5420-5232    | TurionX2 1.9GHz - 2GB - 200GB - ATI 2400XT video - DVD±RW - Home Premium - 15.4" - 4hrs     | \$ 849  |
| Acer TravelMate 5720-6131 | Core2Duo T7300 - 1.8GHz - 12GB - 120GB - DVD±RW - fingerprint - XP Pro - 14.1" - Camera     | \$ 930  |
| Acer Aspire 7720-6026     | Core2Duo 1.5GHz - 2GB - 160GB - DVD±RW - Geforce 8400 Video - Home Premium - 15.4" - Camera | \$ 950  |
| Asus F3SV-A1              | Core2Duo 1.8GHz - 1GB - 160GB - DVD±RW - Geforce 8600 Video - Home Premium - 15.4" - Camera | \$ 1250 |

Notebook Carry Case / Wireless Notebook Mouse / Antec Notebook Cooler **\$29**



### Logitech

|                                 |        |
|---------------------------------|--------|
| Logitech Communicate STX Webcam | \$ 39  |
| Logitech ClearChat Headset      | \$ 13  |
| Logitech X-240 2.1 Speakers     | \$ 35  |
| Logitech 540 / Z4 Speakers      | \$ 79  |
| Logitech Z-2300 2.1 Speakers    | \$ 109 |
| Logitech G51 5.1 Speakers       | \$ 149 |

### Printer

|                               |              |
|-------------------------------|--------------|
| Epson CX4450 AIO Inkjet       | \$ 69        |
| HP - 3050 / 3055 AIO Laserjet | \$ 169 / 289 |
| Samsung ML-2010 Laser         | \$ 69        |
| Samsung CLP-300 Color Laser   | \$ 189       |
| Samsung SCX-4521F AIO         | \$ 199       |



### DVD

|                               |            |
|-------------------------------|------------|
| Verbatim DVD-R 50 / 100pcs    | \$ 18 / 33 |
| Asus BLUE RAY / 12X DVD-RW    | \$ 179     |
| LG 20x LIGHTSCRIBE DVD-RW     | \$ 35      |
| LiteOn 20x USB Ext. DVD-RW    | \$ 59      |
| Samsung 20x DVD-RW            | \$ 25      |
| Samsung TruDirect Ext. DVD-RW | \$ 119     |



### LCD Monitor

|                                    |        |
|------------------------------------|--------|
| Acer 17" - AL1716 - 1280x1024      | \$ 159 |
| BenQ 19" - G900 - 1280x1024        | \$ 199 |
| BenQ 20" - G2000W - 1680x1050      | \$ 189 |
| BenQ 22" - FP222W - 1680x1050      | \$ 229 |
| BenQ 24" - G2400W - 1920x1200      | \$ 319 |
| Samsung 19" - 943N - 1280x1024     | \$ 229 |
| Samsung 19" - 931BW - 1440x900     | \$ 219 |
| Samsung 22" - 2200WM - 1680x1050   | \$ 255 |
| Viewsonic 19" - VP950b - 1280x1024 | \$ 329 |



### Storage & Flash Memory

|  |                     |
|--|---------------------|
| KingstonMicroSD - 2GB / 4GB                        | \$ 15 / 32          |
| Kingston USB Flash 1G / 2G / 4G / 8G               | \$ 8 / 15 / 23 / 45 |
| USB External HDD - 320GB / 500GB                   | \$ 99 / 129         |
| Seagate 750GB FreeAgent Pro FireWire / USB / eSATA | \$ 219              |



### Car CD Holder or CD Wallet

**Free !!**

with any purchased in store! (while quantities last.)

Price & Special are subject to change w/o notice \* All prices reflect to cash discount \* All product names, trademarks are properties of their respective owners



# A Little Piece of Peace of Mind

*RAID arrays for safety, security and speed*

When it comes backing up your data there are a number of methods you can use that range from simple and inexpensive to advanced with a price tag to match.

In recent years RAID has become quite affordable, and while it isn't as cheap as burning backup DVDs, it offers a robust and incredibly quick replacement procedure that most other backup solutions can't come close to matching. Once the initial installation is taken care of, it's also a completely hassle-free solution. In fact, you'll may even forget that it's there until something goes wrong and it steps in to save your digital life....

RAID has been around for a while but has mostly been the domain of business. However, with the ever-falling price of hard drives, consumer RAID solutions are inexpensive and fairly easy to set up and so are a reality at home too.

RAID arrays come in two major categories: those offering data backup redundancy and those offering a drive

access speed boost. There are also solutions that offer both benefits in one package.

## What is RAID:

In the early 2000s, RAID grew very popular among hardcore PC enthusiasts. So much so that as of 2005, most mid-range motherboards come equipped with an on-board RAID controller that supports the major modes of operation. But what exactly is RAID?

The acronym RAID, stands for Redundant Array of Inexpensive Disks (or Drives). In layman's terms, RAID is essentially the use of two or more physical hard disk drives working in tandem to give benefits to your system's hard drive read and write processes. In some cases the benefits can be dramatic while in other situations the point may be that you don't even notice it's functioning (such is the case when using RAID solely for data redundancy).

To be clear, RAID isn't about having a

## Types of RAID Controllers

There are two basic types of RAID controllers; Software and Hardware based. Both offer similar functionality, but Hardware based solutions are usually more expensive since they're often discrete PCI, PCI-X, or PCIe add-in controller cards. The main advantages of Hardware RAID controllers are that performance and error-handling is improved and none of the parity work has to be offloaded onto the main CPU of the system (which is how a software-based RAID solution does it).

Further improving performance is the availability of a read/write cache — this is onboard RAM that is dedicated to the discrete RAID controller and used to increase the speed of reading/writing data even further. Typically, dedicated hardware RAID controllers can even support multiple drive types together as well (so any combination of IDE, SATA, SCSI, and Fibre Channel), but this is usually only taken advantage of in enterprise applications.

Software based RAID controllers are broken up further, into OS based RAID and Firmware based RAID. OS based RAID arrays can't be used as a primary drive since they require a standalone drive to boot up the operating system before it can engage the RAID array. Because of this, they're impractical for most users. On the flip side, Hardware RAID setups can be very expensive for personal or small office use.

The solution created was to use a firmware based RAID that operates on a motherboard's standard disk controller chip. In this way the firmware could initiate the RAID array while the computer is booting so that it can load up the operating system, at which point the OS RAID drivers can then take over. It's still a software-based RAID controller, but the functionality is expanded to include almost all of a dedicated hardware solution's features. This is also what the vast majority of consumer-level motherboards use as their RAID solution.

secondary drive to copy data to and from but rather, an additional drive that can be accessed simultaneously with the primary drive. The advantages of simultaneously being able to read and write on multiple drives are few, but the residual pay off can be substantial. One of the biggest strength of RAID is that the speed of HDD access can increased massively. With HDDs often acting as a bottleneck in PC performance, this overall system performance boost can be huge. In fact, depending on the RAID mode used, the write and/or read speed is multiplied by however many drives are running together in your RAID array — two HDDs is twice as fast as one, four are quadruple the speed of one, and so on. The simple reason for this being that, rather than reading/writing on a single drive, the RAID controller reads/writes to each drive concurrently.

There are a quite a few different RAID configurations, but the three major modes are:

## RAID 0 (Striped)

Striped drives appear as one in the operating system and the increases in both read and write performance depend on the number of disks. If you have two 250GB HDDs, they'll appear as one 500GB drive in the OS and will perform at twice the speed of a single drive (since both drives are read and written to at the same time.) The problem with Striping is that if one of

the drives fail, everything is lost since the data is fragmented between multiple drives. If Drive A gets corrupt, all the data on Drive B (and C, and D, etc.) is useless as a key portion of the data is lost with the single drive failure.

## RAID 1 (Mirrored)

Mirrored drives appear as a single drive in the OS. Because the data is written to both drives together, the write performance doesn't see any improvement, but read speed sometimes receives a boost (depends on the RAID controller) since both can be read from at the same time. Mirroring writes the exact same data to both drives simultaneously, creating a complete, real-time, on-the-fly backup in case of hard drive failure. The only problem with mirroring is that it's only useful in the case of physical hardware failure. If your primary drive fails due to a virus/spyware/worm, the secondary mirrored drive will also fail, because it contains the exact same information (viruses and all). If two 250GB drives are set up in a mirrored configuration, they will appear as a single 250GB volume.

## RAID 5 (Striped with Distributed Parity)

Requires a minimum of three physical hard drives and offers the performance of RAID 0, but has redundancy in the form of distributed parity. One drive can fail, but operation of the array will continue as normal (with a slight

Trusted

+

Connected

+

Canadian



Marc Saltzman

As a prolific freelance journalist, author, radio and TV host, Marc is one of North America's most recognized, respected and trusted experts in the ever-changing world of high tech. Marc specializes in consumer electronics, computer hardware and software, video gaming, portable devices and Internet trends.

hubcanada.com





Since 1997 [www.powersonic.ca](http://www.powersonic.ca)

Open MON. - SAT. 10am - 6:30pm

# Powersonic.ca



11400 Bridgeport Road, Unit # 104, Richmond, BC V6X 1T2 TEL: (604) 214-9316, 214-9326 FAX: (604) 214-9317

## The Pioneer

**Sempron 3600.....\$209**  
Dual Core 4200.....\$229

ECS Motherboard  
512MB DDR2 RAM  
GeForce 6100 Video on Board  
Sound Lan on Board  
80GB 7200rpm HDD  
LG 16x DVD  
ATX Mid Tower Case



## AM2 Master

**AM2 Dual Core 4200.....\$259**  
AM2 Dual Core 4800.....\$275  
AM2 Dual Core 5200.....\$299

ASUS M2N-MX SE PLUS Motherboard  
1GB DDR2 667MHz RAM  
Video Sound Lan on Board  
160G SATA 7200rpm HDD  
LG 20xDVD-RW Dual Layer  
500W Cube Case w/Handle



## Play Center

**AM2 Dual Core 4800.....\$399**  
AM2 Dual Core 5000.....\$419  
AM2 Dual Core 5600.....\$449  
AM2 Dual Core 6000.....\$479  
ASUS M2N-SLI Motherboard  
1GB DDR2 667MHz RAM  
eVGA 8500GT 256M Video  
250G SATA2 7200rpm HDD  
LG 20xDVD-RW Dual Layer  
Black Mid Tower Case



## Power Gamer

**AM2 Dual Core 5200.....\$849**  
AM2 Dual Core 5600.....\$869  
AM2 Dual Core 6400.....\$909

ASUS M2N32-SLI Deluxe MB  
2GB 800MHz DDR2 RAM  
nVidia 8800GT 512M PCI-E  
500G SATA2 (32M) HDD  
LG 20xDVD Burner Dual Layer  
Antec SONATA 3 Case  
500W Power Supply



Bundle with system only: Keyboard+Mouse+Speaker \$9 Logitech Keyboard + Optical Mouse \$15 Logitech 2.1 Subwoofer Speaker \$22 Genius S110 Speaker \$6.50

## Home Officer

**CeleronD 3.3G.....\$219**  
Dual Core E2160 1.8G.....\$245  
Dual Core E2180 2.0G.....\$259

Asus P5VD2-VM SE MB  
512MB DDR2 RAM  
Video Sound Lan on Board  
80GB 7200rpm HDD  
LG 16x DVD  
ATX Mid Tower Case



## P5 Partner

**Dual Core E2160 1.8G.....\$269**  
Dual Core E2200 2.0G.....\$289  
Core2Duo E4500 2.2G.....\$329

ASUS P5GC-MX1333 Motherboard  
1GB DDR2 667 RAM  
Video Sound Lan on Board  
160GB SATA 7200rpm HDD  
LG 20x DVD Burner Dual Layer  
ATX Mid Tower Case



## P5 Commander

**Core 2 Duo E4500 2.2G.....\$489**  
Core2Duo E6550 2.33G.....\$539  
Core2Duo E6750 2.66G.....\$559  
Core2Quad Q6600 2.4G.....\$619

ASUS P5K-SE Motherboard  
1GB DDR2 RAM  
eVGA 8500GT 256M PCI-E  
250G SATA2 HDD  
LG 20xDVD Burner Dual Layer  
Cooler Master Tower Case



## P5 Xtremor

**Core2Duo E6550 2.33G.....\$919**  
Core2Duo E6750 2.66G.....\$939  
Core2Quad Q6600 2.4G.....\$999

ASUS P5K Motherboard  
2GB 800MHz DDR2 RAM  
nVidia 8800GT 512M PCI-E  
500G SATA2 (32M) HDD  
LG 20xDVD Burner Dual Layer  
Antec NINE HUNDRED Case  
CoolerMaster 600W Power



**Acer TM7720 - XP PRO \$979**  
Intel Core 2 Duo 2.0GHz CPU  
160GB Hard Drive  
2GB DDR2 RAM  
Intel GMA X3100  
DVD+/-RW Burner  
17" 1440x900 WXGA+  
Wireless a/g/n Lan  
Camera, Card Reader  
FingerPrint Reader  
Windows XP Pro preloaded  
more Laptop on [www.powersonic.ca](http://www.powersonic.ca)



## ASUS Eee PC 4G Surf

**\$349**  
- 7" LCD Display  
- Only 2.0 lbs  
- Wireless Network  
- 512MB DDR2  
- Shock-proof 4GB SSD  
- Linux Preloaded  
- XP Compatible  
more Laptop on [www.powersonic.ca](http://www.powersonic.ca)



## Kingston 1GB / 2GB Notebook Memory Upgrade Special



(Free Installation)

## ASUS M51SN-A1

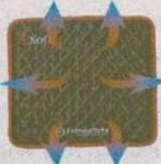
**\$989**  
Intel Core 2 Duo T5450 CPU  
250GB Hard Drive  
3GB DDR2 RAM  
nVidia G9500M 512M Video  
DVD+/-RW Burner  
15.4" WXGA  
Wireless a/g/n Lan  
Camera, Card Reader  
Bluetooth, FingerPrint  
Windows Vista Home Premium preloaded  
Free Carrying bag & Mouse, 2yr Warranty



\*While Quantity Last

## ThermalTake iXoft Fanless Notebook Cooling Pad

**\$22.88**



\*While Quantity Last



**\$2.88**

CD Wallet  
can hold 40 CD / DVD

## 7" Digital Photo Frame (Buy 3 get 1 free Polaroid P310 Photo Printer)

**\$82**



\*While Quantity Last

## Aluminum Storage Case can hold 200 CD / DVD

**\$15**



\*While Quantity Last

## APEVIA X-QPACK2 500W ATX Cube Case with Handle



**\$118**

## ThermalTake BlacX 2.5"/3.5" SATA Hard Drive Docking Station

**\$35**



## Genius Stereo Headset w/ Mic HS-02B



**\$6.88**

\*While Quantity Last

## A4 Metallic Earphone in Ear Design



**\$12**

\*While Quantity Last



**Video Cable  
On Sale**

## TV Card Player



Play back movie,  
mp3, pictures from  
card reader or USB  
without computer

\*While Quantity Last

**\$39**

## SD/MMC Card Reader



**\$5.88**

\*While Quantity Last

## Genius 8"x6" Tablet with Wireless Mouse & Pen



**\$58**

## Mediasonic High-Speed NAS Enclosure (SATA)

9MB/sec via RJ45  
SAMBA Server  
FTP Server  
UPNP AV Server



**\$75**

## 2.5" External Mobile Drive w/ Samsung 120GB HDD



**\$75**



**\$45**

Mini Pocket Size  
USB2.0 TV BOX

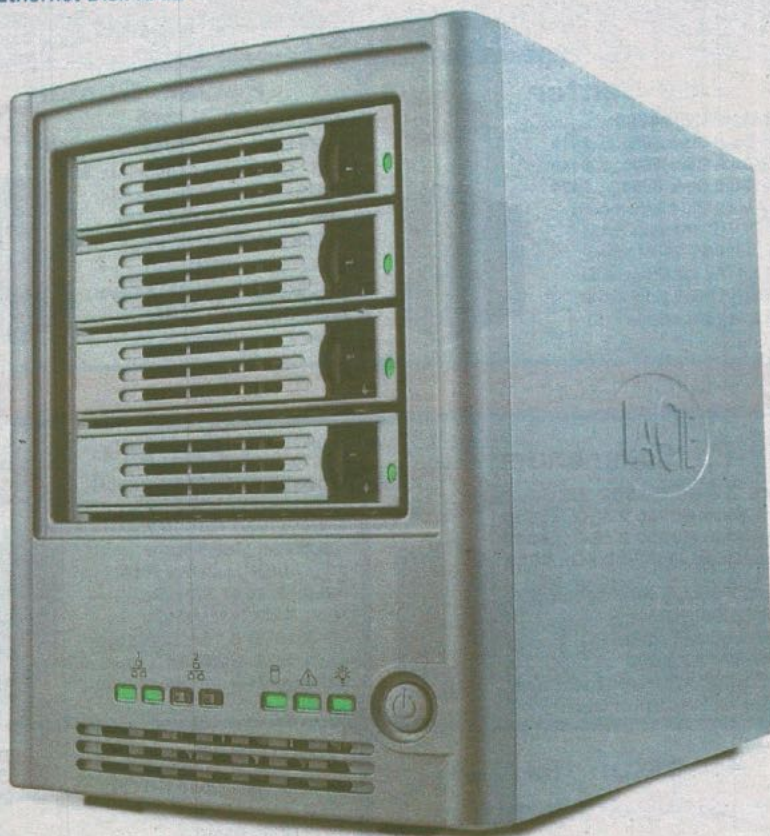
## ASUS Silent EN8600GT 256MB DDR3 HTDP PCI-E Video Card



**\$105**

Price reflects 3% discount of cash/interac payment. Product's images may differ from the pictures shown in this ad. Microsoft oem products will be sold with new system only. Availability subject to change without notice. All trademarks and brand names are properties of their respective owners. Powersonic is not responsible for any errors or omissions in this ad content.





performance decrease until the broken drive is replaced). When the new drive is installed it will be rebuilt using the parity data saved on the other drives in

the array. Unfortunately this mode is expensive because it requires more than just two drives, but also because it usually requires a discrete hardware

based RAID controller (usually not integrated into consumer-level motherboards).

Another interesting fact is that these different RAID modes can be nested into each to combine the benefits of each. For example, a RAID 1 + 0 array would consist of four hard drives running as two sets of Striped/RAID 0 arrays. This way you would get the speed of striping for both reading and writing, but if any of the drives failed you would have a back up to put in its place due to the identical RAID 1 array.

For the sake of brevity, the purpose of this article is to emphasize RAID 1 (mirroring) since its function and implementation is very straightforward and its benefits for backup purposes are crystal clear. When using RAID 1 you'll have two of the exact same hard drives all the time. If your primary drive ever fails, you can simply swap it out with the working one (the mirrored backup) and you'll be up and running instantly as if nothing ever happened.

#### What's involved:

The most important step is to read through the 'Onboard RAID' section of your motherboard's manual. This may seem like a cop-out on our part, but the truth is, RAID controllers on consumer motherboards can differ greatly and as such, require different step-by-step instructions. With that said, for your typical RAID 1 array you'll want two equally sized hard drives that use the same connection interface (e.g. SATA.) Ideally you'll want to get two drives of the same make/model to avoid any potential compatibility issues (though they are rare, they're still possible). However, the only hard and fast requirement is that they share the same interface that your motherboard supports (again, refer to your motherboard's manual).

If you already have two hard drives laying around, but they're different sizes, you can still use them in a RAID array, but the bigger drive will automatically be limited to the size of the smaller one (If you have a 320G and a 250GB, both drives will be limited to 250GB.)

Most motherboards have two or four (or sometimes more even numbered sets) HDD connectors allocated specifically to RAID operation. Obviously these are the connectors you'll want to use as they're the ones associated with the motherboard's onboard RAID controller. Often the RAID BIOS is disabled by default so any HDDs connected to the RAID specific SATA-ports will be seen as two regular, standalone drives until you enable RAID functionality. It's important to note that the RAID BIOS is often times separate from your motherboard's BIOS.

Sometimes enabling RAID requires that you physically switch a jumper on the motherboard itself; again, this is why you'll want to read your motherboard's manual.

When you enable it, you'll want to (re)enter the RAID BIOS, but this time you'll be able to set the parameters of your RAID array. Parameters include things like RAID mode/level (RAID 1 is mirroring), fragment size (for striping), and so forth. Generally, the default settings will be fine for most users, especially if you're using RAID 1 since the settings won't improve performance as the drives will be operating in a standard operation.

After the parameters are set and saved, you'll have to format the drive(s), load on your OS and install drivers as per usual. It's a pretty unambiguous process — two drives, connected to the proper ports with RAID functionality enabled, and then commence with normal rebuilding of the OS. After that, you'll be able to swap your primary and secondary drives, essentially avoiding any major downtime.

#### Conclusion:

The beauty of RAID is that, depending on your budget and how crucial your data is, you can create a solution that offers you a physical form of redundancy. If you have the money and appreciate the impressive speed advantages, RAID 5 may be a worthwhile redundancy solution to look in to. Similarly, if you know you won't be keeping any important data on that specific computer or if you have another back-up solution in place, doubling your hard drive read/write speed with RAID 0 will allow you to load up programs faster than ever before.

Whereas a lot of issues in software can be alleviated with preventative measures and other applications (like anti-virus software), nothing other than physically backing up your data can help you in the event of a hardware failure. Using mirroring grants you a second chance with what would otherwise be a dead end. Mirroring gives you not only a completely rebuilt hard drive with every bit of information still intact, but also gives you an instant solution to what would otherwise be a crisis. Not bad, for something that's probably already on your existing motherboard.

By Mike Palermo



Chad Sapieha

Chad Sapieha is a Toronto-based freelance journalist specializing in consumer technology, including video games, computers, and home theatre components. He spends his days at home with his young daughter, who enjoys helping him test not only games and gadgets geared for toddlers, but also the durability of devices never intended to come into contact with a curious three-year-old.

Trusted  
+  
Connected  
+  
Canadian

hubcanada.com



For more of Mike Palermo's articles, visit the hubcanada.com writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)



# Power Pellets: Spore Hits the Home Stretch

*Years of anticipation are finally over*

After years of delays, Maxis finally commits to a firm release date for its long overdue, ridiculously hyped, and unabashedly odd simulation game. Can it possibly live up to the reputation that has preceded it?

After years of waiting, Maxis Software and its publisher Electronic Arts have finally confirmed that Spore, a PC game that has been subject to almost unparalleled amounts of pre-release publicity and anticipation for several years, will finally reach consumers on September 7 this year.

The game, which will provide players control over the evolution of their own unique species, was first unveiled to critics and gamers at the video game trade show E3 in Los Angeles in 2005, where it captured imaginations and received countless awards for innovation and design. It was at the show again in 2006, where it won many of the same awards all over again. It appeared once more at the event in 2007, yet again garnering plenty of acclaim, and it will undoubtedly show for a fourth time at this July's conference.

Typically, games with such long and publicly scrutinized development cycles eventually lose the faith of consumers. People either begin to suspect that the game suffers from some issue that has its developers terminally vexed, or they simply lose interest, believing it to be one of those titles that's perpetually just over the next hill. But, amazingly, Spore's hype has simply grown year after year, with more gamers talking about it every day and more articles (like this one) being written about it with each passing month.

How has just the thought of this game, which lacks an established brand and is without predecessor, managed to captivate us for so long? Much of the responsibility goes to its mastermind, developer Will Wright, who earned the respect of both the industry and gamers with his almost foolishly successful SimCity and The Sims games. He shares company with an elite group of PC game designers, including Sid Meier (Civilization), Peter Molyneux (Populous), and Cliff Bleszinski (Unreal) who command the attention and



respect of the gaming community. Anything these game gurus work on is destined to be both closely scrutinized and eagerly anticipated by their fans.

But credit must also be awarded to the game's original premise. In Spore, players control a species through all stages of its evolution, beginning at the cellular level and moving all the way along to become a space faring society. Each phase of evolution will apparently deliver startlingly different types of play, from simple arcade-like action to complex, open-ended society simulation. Players will purportedly have extensive control over their species' physical appearance and behaviour via in-game events and decisions, making their species unique to them. Plus, each player's species will allegedly be sent back to Maxis' servers where it could be used to help "pollinate" other player's worlds.

It all sounds quite bizarre and rather complicated. However, Spore's designers claim that the game is so

intuitive and that it has such simple controls that players of almost any skill level will be able to jump into Spore and start playing in minutes with little difficulty. Indeed, much like Wright's previous games, Spore seems poised to sell millions of copies to players of all ages, both genders, and every level of gaming experience.

Still, there are some unavoidable concerns. First off, can it possibly live up to its hype? If it doesn't completely change the way we look at games, as the press has spent the last three years claiming it will, there could be some backlash from the gaming community. Keep in mind that competing developers have had a long time to analyze the sort of play Spore promised back in 2005 and create their own imitations in the interim.

There's also the very real possibility that the game could seem technologically dated. There have been countless advances in the fast moving world of PC graphics over the last three years—not the least of which is Microsoft's new API, DirectX 10—and whether or not Maxis has kept their game abreast of these changes during its lengthy development process remains to be seen.

But this discussion verges on academic. All the speculation will — finally — soon be over. In a few short months we will know whether Spore's ballyhoo has been justified or if the breath we have been collectively holding for several years was for naught. For what it's worth, I think we're in for a treat.

*By Chad Sapienza*

**Chad Sapienza is a Toronto-based journalist and frequent contributor to a variety of North American news, technology, and lifestyle publications.**

## The Club

**Publisher:** Sega **Developer:** Bizarre Creations **\$49.99** **Score:** 3/5

Review rig: Windows Vista; 3.0 GHz Intel Dual Core processor; 2GB of RAM; 512MB ATI Radeon X1900 XT graphics card; displayed at 1280 x 720 on a Dell 2407FPW 24-inch LCD.)

The Club is the sort of title that gives the video game medium a bad rap among social conservatives. It's not the most violent game ever made (though not for lack of trying). Nor is it the most profane or lewd. The problem is its commentary on our (meaning gaming) culture, which seems to be that all we need to have a good time is a little purposeless ultraviolence.

The game's objective is simply to kill as many human targets as quickly and with as much pizzazz as possible to achieve a high score. There's a threadbare plot explaining why we go on all of these ruthless rampages (it's part of a bloodsport played by an exclusive and highly secretive club), but there's not much more to it than what's printed in a few sentences in the instruction booklet. Apparently, the developers figured that a coherent narrative would only get in the way of all the murdering.

The tricky thing about reviewing a game like this is that the action is competently architected — and, admittedly, kind of fun. Taking control of one of eight bloodthirsty characters (one of whom is named Killen, which in itself says a lot about the game), we rush through dozens of small but expertly designed maps, cinematically bursting through windows and doors as we use rifles and grenades to run up as many consecutive kills as possible before a combination timer expires.

The design is difficult to criticize; The Club's fast paced, score-based play can make for a challenging experience. And with half a dozen single player modes and a few more that can be played online, there's enough to keep people shooting for some time. It's just a shame that Bizarre Creations couldn't have figured out some way to provide a better context to justify — or at least explain — the game's bloody action.



For more of Chad Sapienza's articles, visit the [hubcanada.com](http://hubcanada.com) writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)



# In the Field: Trial by Fire

*Preliminary report of the Olympus E-3*



It could have ended badly, but the E-3 came through and kept me out of trouble. As well as being a writer I do some commercial photography and an E-3 loaner arrived from Olympus a week before I was to fly to Vancouver Island on a one-day photo shoot.

Normally I wouldn't take unfamiliar equipment on a job but I'd done the same assignment a year before and the E-3, along with the 12-60 mm f2.8-4.0 Zuiko zoom lens, an HLD-4 vertical grip and the FL-50R flash unit seemed an ideal fit. So I threw caution to the wind and went with it. The happy ending to the story is that the camera performed like a thoroughbred and the client was very happy with the work.

## The case

The job was basic photo illustration — of students conducting science experiments. In all there were around 30 setups; some with and some without a neutral grey backdrop. I used the FL-50R flash mounted on a stand and bounced into an umbrella as the main light and a circular reflector to balance. My drill was to move the backdrop in or out, set up the flash and reflector for a one or two-person setup, shoot it, then move to a different lab station and repeat the process. Because of scheduling issues, we had to finish by early afternoon so we shot steadily from 8 am to 1 pm, took a short lunch and then finished.

I had just one battery and wasn't sure if it would last all day, but thankfully the HLD-4 vertical grip comes with a battery holder for six generic AA cells, so I had backup — which I didn't need because the single battery easily held up for 400+ shots.

I was constantly moving the lighting and the Olympus wireless RC flash system was a joy to use. The E-3's built-in, pop-up flash doubles as the wireless commander for flash units like the FL-50R and the system is quite versatile, although not unique for cameras of this calibre. You can select one of four communication channels and set up three separate banks of wireless flash units with different exposure modes and power levels. One possible limitation is that you can't use the pop-up flash simultaneously as a flash and a wireless commander — it's one or the other.

In the shots without a grey backdrop, I wanted the lab to be slightly underexposed in relation to the subject. This was almost too easy to set up: dial back exposure to -1EV, take a test shot

and then tweak the exposure and flash compensation levels until the subject and background were in just the right balance.

The E-3 incorporates an 11-point autofocus system which is a big improvement over the three-point system Olympus uses on its other SLRs. When paired with the 12-60 zoom it definitely is sit-up-and-take-notice fast. The ability to choose any of the 11 points as the focus point was very useful, since the precise focus point — a beaker or test tube for example — was usually in the lower third of the frame and 30 cm or so in front of the student models. I wanted portrait and landscape variations for each setup and it was easy to adjust the focus point as necessary.

Incidentally, the E-3 doesn't have a dedicated focus-assist lamp, but uses the pop-up flash, which means you have to raise it in order to get to this feature. The flash sends out a weak stroboscopic burst that lasts about a second. It works fine but the rapid flashing is more disconcerting than the steady glow of the usual focus assist lamp — and you won't need it until the ambient light gets quite dim.

There is a small white window on the front of the camera that looks like an AF assist lamp, but in fact it is a white balance sensor. I used auto white balance and found that it worked well in the mixed lighting of fluorescent lighting and daylight balanced flash. Only the skin tones of one student with very fair complexion was a tad magenta. Because I shot everything in RAW, adjusting it after the fact was not a big deal, but I could also have tapped into the E-3's white balance system, which is quite flexible. You can set WB by the usual categories like daylight, incandescent, etc., or by specific Kelvin temperature. Then you can tune the balance both along the amber-blue and green-magenta axes using the WB compensation feature. Furthermore you can use WB bracketing, which saves up to six different versions of an image in which you can independently pick different settings for the amber-blue and magenta-green axes. Again, not unique to Olympus but what you'd expect in a premium product — and with the Olympus you can use WB bracketing with RAW as well as JPEG files.

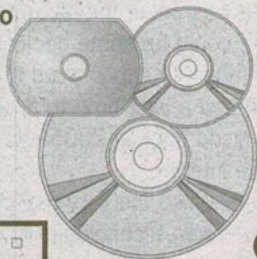
## Diversions

I arrived on the island a day before the assignment and that gave me some

## CD / DVD PRODUCTION SOLUTIONS

Business card CD  
Mini / Shape CD  
Standard CD ROM / Audio  
CDR DVD-R Copiers  
CDR DVD-R Printers  
Media Supplies  
Packaging Supplies

CD / DVD Duplication / Replication  
CDR / DVD-R Printing  
Offset / Digital Printing  
Assembling & Packaging  
Fulfillment  
Tape to DVD conversion  
(8mm movie/ mini DV/ VHS)



Now Available  
USB Flash Drive  
Printing & Duplication

Quality Service  
Fast Turnaround

Visit our web site for references and client list.

[www.progressmarketing.com](http://www.progressmarketing.com)

## MACROVISION DVD COPY PROTECTION

Tired of having your DVD video pirated? Increase sales by minimizing piracy using Macrovision's RipGuard-MOD copy protection technology. Call or email for more information.

Macrovision and RipGuard-MOD are registered trademarks of Macrovision Corporation

macrovision



## QUALITY CD/DVD MEDIA & ACCESSORIES

CD/DVD media | Label kit | Label supplies

CD jewel cases | paper sleeves | DVD boxes (holds 1,2,3,4,6,8,9,10) | Clamshells

For pricing please visit: [www.progressmarketing.com/price.htm](http://www.progressmarketing.com/price.htm)



**PROGRESS Marketing Inc**  
[www.progressmarketing.com](http://www.progressmarketing.com)

#110 - 12811 Clarke Place, Richmond, BC V6V 2H9

Tel: (604) 821-0066 (800) 818-6944

Email: [info@progressmarketing.com](mailto:info@progressmarketing.com)

Hours: Mon - Fri 9 am - 5 pm

Since  
1994  
14  
Years of Excellence

MEMBER  
IDDA  
INTERNATIONAL DISC  
DUPLICATING ASSOCIATION

Contact Richard : 604-821-0066 Email: [rpearce@progressmarketing.com](mailto:rpearce@progressmarketing.com)

[WWW.PROGRESSMARKETING.COM](http://WWW.PROGRESSMARKETING.COM)



time to walk around with the camera. I was hoping for some dramatic storm activity along the shore, but got only a grey day and rain. Olympus advertises the E-3 as being well sealed and weatherproof, so I was more concerned with my coat slowly soaking through than the rain harming the camera. I found exposure was quite accurate although the low contrast of an overcast day didn't really tax the ability of the camera to handle a wide dynamic range. Colour is exceptional. The 10 megapixel sensor, paired with the sharp lens provides high detail and very good local contrast. I was also happy with some gulls in flight shots I captured, thanks to the good autofocus tracking and the built-in image stabilization.

One of the E-3's highly publicized features is the double-articulating LCD screen which, when paired with the Live View mode, provides additional utility that a fixed screen can't. A side benefit is that you can park the screen facing inward when you don't need it, which protects the glass surface.

But truth be told, I haven't used it much as much as I thought I would, and the main reason is because the E-3's optical viewfinder is such a joy to use. It gives 100 per cent frame coverage and the 1.15x viewfinder magnification nullifies the effects of the smaller (compared APS) image sensor. I had a Nikon D300 on hand to compare it with, and while the aspect ratios are different, the through-the-eyepiece experiences are both highly satisfying.

As with most high-end cameras the issue of electronic noise from high ISO settings is well under control in the E-3. For critical work, I'd be comfortable going to ISO 400 or maybe 800, which is a two-to-three stop

gift. Combine that with the two or three stops you gain from the built-in image stabilization and the fast f2.8 lens and you get a lot of help for hand held shooting as the light gets dim. The E-3 has an ISO-Auto Set feature that allows you to set the upper limit the camera will use on Auto-ISO. This gives you a handle to control how much high-ISO noise you are willing to live with.

### Controls

There's always an underlying issue of instrument vs. user when assessing usability: do I not like something because it was poorly designed or implemented; or because I don't know the instrument well enough or because I'm used to doing it differently on the camera I usually use? For that reason, usability has to be somewhat personal, and what applies to me may not apply to you. For the most part I found the E-3 a pleasure to use. In a relatively stable environment like my photo shoot example, it wasn't hard to learn the handful of controls I needed, and then get on with the job. The last thing you want is to be constantly trying to remember how to change a setting. I didn't like the way some things were implemented or the placement of some buttons, but it was easy enough to adjust.

Like all electronic cameras the E-3's complete feature set is controlled by a series of menus. These are grouped into four main ones for shooting and one for playback. For general control the E-3 uses a common method of main dial controlled by your thumb, sub-dial controlled by your index finger and buttons to access specific settings. There are three buttons on the left side of the pentaprism that have dual functions — twirl

the main dial for one and the sub-dial for the other. A well-placed Fn button (right at the tip of your thumb) is programmable, so that you can assign the control you use most often to it. The buttons are well labeled, so you can find what you want just by scanning the camera and you can monitor the adjustment both in the viewfinder and on the top mono LCD panel.

But the E-3 implements a third way of getting at common settings. The Info button brings up a screen called the Super Control Panel, and you can highlight one of 18 common settings (ISO, White Balance, Exposure compensation, colour space, etc.) using the four-arrow cursor pad and OK button and then use either the main or sub-dial to alter the setting. The Super Control Panel also appears when you hit one of the function buttons. Very slick.

### Conclusions

Colour: beautiful. Resolution: easily good enough for commercial illustration work. ISO noise: gain three stops with little penalty. AF: quick and precise. Usability: gets better with use. In other words, so far so good. I've barely gotten into this advanced instrument but nothing too raggedy has reared its head. The camera and lens combo is heavy, but well balanced. It's well mannered in a controlled interior setting; we'll have to see how it stands up in the wild.

By David Tanaka



For more of David Tanaka's articles, visit the hubcanada.com writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)





# An Advanced Home Network

*Wired for sight and sound... wirelessly*

The humble router is the backbone of your home network. It does its job with neither accolade nor thanks. It pushes packets to and fro, allows you to share files between laptop and desktop, shares your Internet connection, gets your Wii online with a bare minimum of effort and more. It does it so unobtrusively that we can be forgiven for forgetting that it's there.

Perhaps the time has come for your lowly 802.11b router to shuffle off in to the sunset. An 802.11g router still has life in it yet but even here, moving up to the "next big thing" offers an impressive boost to transfer speed and range — increasingly important as our living rooms come online and we look to stream media from a central server to locations all over the house.

## Key benefits

Perhaps the biggest benefit of the 802.11n spec is the fact that, right out of the box, it's up to 10 times faster than existing wireless standards when connecting with other 802.11n devices. Because it uses a multiple input, multiple output scheme (MIMO), it can layer network traffic on network traffic without the confusion that can plague previous spec routers.

## No need to upgrade your other devices... yet

With 802.11n, 802.11a/b/g devices are fully compatible and unlike previous changes to 802.11 spec, users don't have to choose which mode to broadcast in. Where 802.11g routers offer mixed (802.11b, 802.11g) compatibility mode, it makes for a slower connection.

## Setting it up

We approached Linksys to lend us a full wireless product suite; the company is putting a pretty big focus on its 802.11n products. We received the WRT600N router, WEC600N ExpressCard adapter and the DMA2200 Media Center Extender with DVD player, along with the NAS200, featured in this month's In the Lab test.

## Dual-Band Wireless-N Gigabit Router with Storage Link WRT600N \$279.99

According to the Linksys, WRT600N actually uses the signal reflections that would confuse earlier routers to boost the effective wireless range of the device. It also claims that the further away from the access point the client is, the more speed advantage you get. In short,

it has the potential to be an excellent solution for getting your living room or den online when your DSL or cable connection comes in at the opposite side of the house or even upstairs.

The WRT600N router has a USB port on the back; something we've been looking for in a router for some time. With it, you can share an external hard drive across the network (including mapping it as a virtual drive so it acts like a normal hard drive on any computer that's allowed access) or a USB key. Paired with good backup software (not included), this could be a full backup solution.

Setting up the router is simple; the bundled software takes care of the most important issues, guiding users through step-by-step. Once the initial configuration is complete, you can drill down a little deeper in to the device settings via the familiar browser-based control panel. Within the WRT600N control panel though, you'll notice a few new and expanded options. Quality of service (QoS) settings are much improved, allowing for more granular access to how devices on the network are prioritized. This is key if you're a VoIP user; traffic to and from your VoIP router can be prioritized so that the up and down stream from a BitTorrent download, for example, doesn't interfere with the quality of your phone call.

A new "Storage" tab that allows users to administer access to a storage device connected to the router via USB. There's also a UPnP (Universal Plug and Play) server option if you have other UPnP network devices at home. You'll also find an FTP server option. Both of these are disabled by default.

## Media Center Extender DMA2200 \$249.99

With this package — assuming there's a Windows Vista Media Center PC on the network — it's easy to stream content from PC to your HDTV. Connecting via wireless (802.11n) the DMA2200 brings pictures, music and video from the small computer screen to your big HDTV panel without the headaches associated with running Ethernet cable and without running in to the bandwidth limitations of an 802.11g or earlier wireless system. Using Ethernet is still an option however, as is powerline networking.

Where the DMA2100 is a self contained Media Center Extender device, the DMA2200 adds in an upscaling DVD player and an optical audio connection (Toslink). Round the back, connection options abound: HDMI,



Dual-band Wireless-N  
ExpressCard WEC600N

component, S-video, composite video, coaxial audio and good old fashioned RCA.

Once the simple and painless initial setup is complete, you can stream a majority of popular audio, video and picture formats straight to your high-def set. MPEG-1, MPEG-2, XviD, H.264 and WMV9 video codecs are present and accounted for. It supports WMA and WMA Pro (naturally) PCM, MP3, Dolby Digital AC-3 audio formats and standard picture formats like JPEG, BMP. In other words, just about everything in your collection should play without issue, though there are a few formats that might leave some users out in the cold.

The look of the device is subdued. It's longer than it is wide which in my opinion, is a good thing. Its face is simple and black and the only hint to the fact that it's more than a simple DVD player come in the form of three screw-on antennae at the back. There are obviously not required if connecting to the network via Ethernet.

As a simple — and perhaps more important, quiet — means of getting your digital content from PC to TV, the DMA2200 is a winner, despite its exclusion of a few video, audio and picture formats that the more vanguard might use.

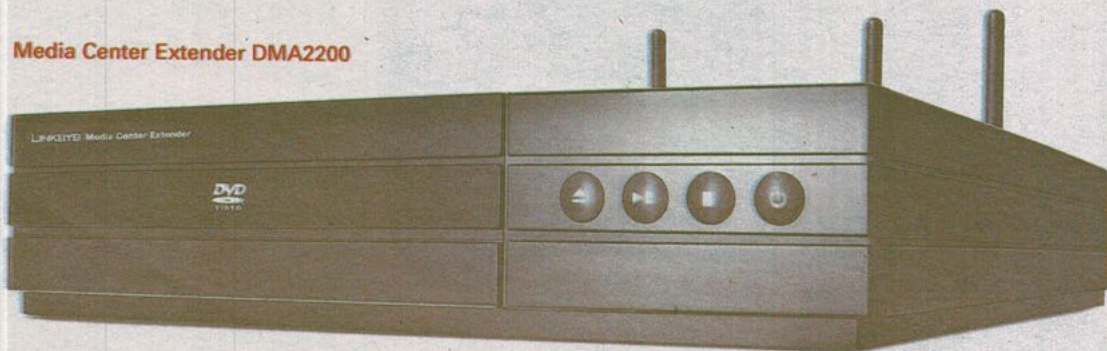
## Dual-Band Wireless-N ExpressCard WEC600N \$89.99

This ExpressCard-format 802.11n wireless adapter raises an interesting point; there are, as yet, not many devices on the market that are 802.11n-ready, and no notebooks that we've heard of. Your Centrino or other 802.11b/g notebook will be able to connect to your 802.11n network but won't enjoy the speed boost. For that, you'll need a PCMCIA or ExpressCard format 802.11n card. That's the price of early adoption. If 802.11n reaches the ubiquity of other 802.11 standards, expect to see notebooks and a range of other devices sporting on-board connections. Until then though, no dice. 802.11n cards can, however, connect to any network, whether a/b/g or n.

As connection cards go, Linksys' solution is good; it only juts about 25mm out from your notebook chassis and as such, is fairly unobtrusive. It runs on the 2.4 and 5GHz bands to avoid network congestion in heavy traffic areas. Within the confines of your 802.11n network — less confined than with other WiFi specs — the card takes advantage of MIMO technology to give an appreciable boost to file transfer speed across the network; perfect for large file transfers or streaming media.

By Andrew Moore-Crispin

## Media Center Extender DMA2200

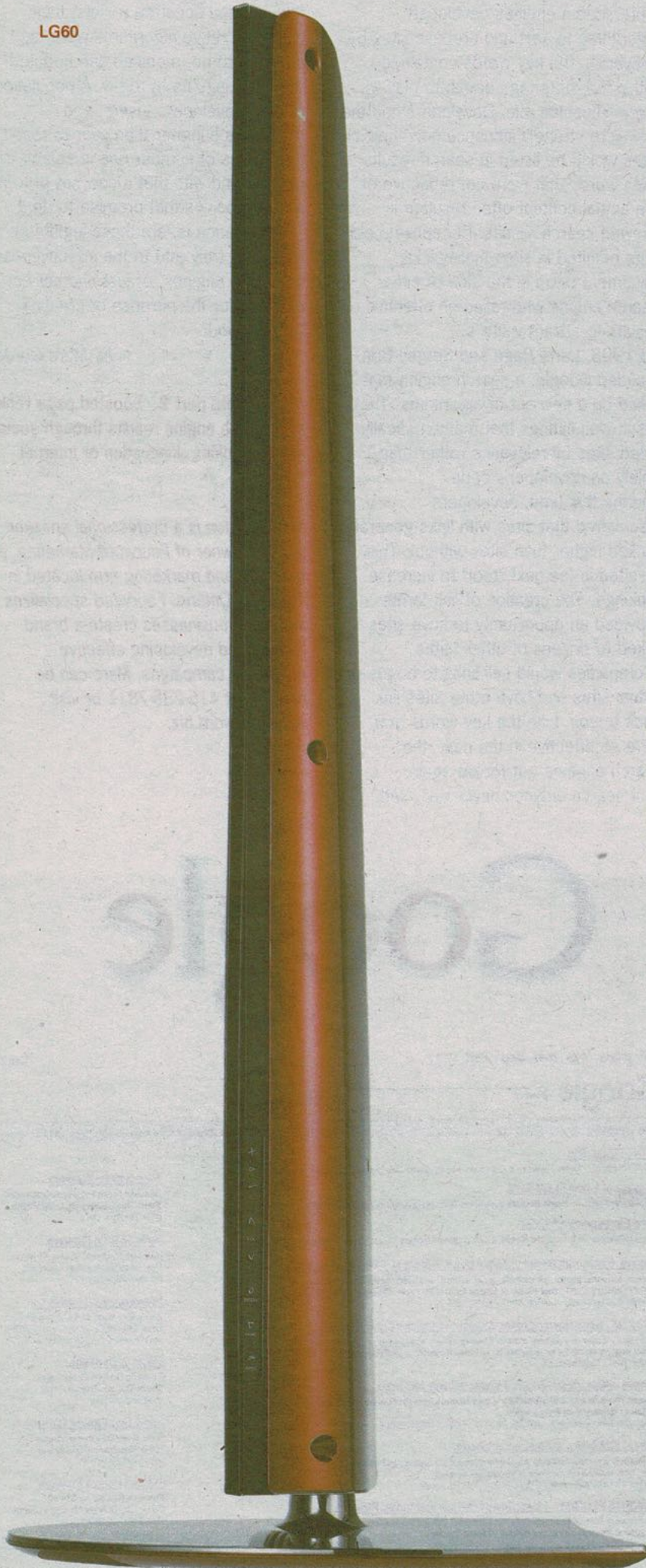




# The Latest From LG

*A look at what's in store and what's in stores...*

LG60



In Toronto recently, LG was showing off the latest in its consumer electronics and appliances lines. The event itself very much mirrored what LG was showing at this year's Consumer Electronics Show (CES) in Las Vegas, but afforded a chance at a closer look at the products and a chance to see (and hear) them perform away from the madness of the show floor.

Frank Lee, Public Affairs Director for LG led us through the showcase and explained what consumers can expect to see on retail shelves in 2008.

Where previous years have seen a discussion of which flat panel technology is better, LCD or plasma, this year's discussion focuses more on the technology that lies beneath. Specifically, the discussion (from many manufacturers) will focus on 120Hz refresh rates in direct view displays. Traditionally, flat panel displays have had 60Hz refresh rates which translates to 60 frames per second (FPS). Given that movies are generally shot at 24 fps and knowing, as we do because we paid close attention in grade six math, that 24 does not divide evenly in to 60. The result is an almost-but-not-quite invisible jitter when converting a 24fps film to a 60fps panel. Now, because we were so studious, we also know that 24 does divide evenly in to 120 (1:5). 120Hz panels can display 24fps content (read: just about every piece of film from the last century) without any funny math, otherwise known as 2:3 pulldown.

The result is a much smoother picture, perfect for the fast action in some movies, video games and sports. The effect is especially noticeable with text scrolling on screen.

It is difficult to differentiate products in the home theatre space with just tech specs; the differences between what one manufacturer and another at about the same price point offer is often minimal. Lee's advice is tried and true: see which panel looks the best to you in the store; mess with the colour settings to find the display that suits your needs.

LG is differentiating itself in part with design. Its LG40 HDTV with built-in DVD in sizes of 26- and 32-inch is designed with the bedroom in mind, Lee says. Minds out of the gutter; he's referring to a more avant garde design. LG research shows that Canadians appreciate attractive and cutting-edge design in consumer electronics... but we tend to go for the more subtle look when outfitting our living rooms. In the bedroom, we're more wont to take design risks. The LG40 fits the bill with its red stand and panel highlights and it's part of an "art nouveau" line. It is

designed with the bedroom in mind; it uses the invisible speaker technology that many sets in the LG line feature and also has an on-board upscaling DVD player.

The LG60 LCD panel is perhaps the jewel in LG's display technology crown. It sets itself apart by adding a little design flourish in the form of a red and black design scheme that wraps around to the back of the unit. An LED lit ring in the bottom centre of the panel does absolutely nothing save serve as a focal point of the panel's slick design... even when the panel is off.

As with several panels in LG's line, the LG60 features hidden speakers that keeps the bezel size down (Lee says the bezel will all but disappear in the next couple of years). A unique approach to sound on a flat panel, the face of the display acts as the speaker membrane; it's the same technology that's used in ultra-thin speakers. In our brief look at the technology, the sound it produced seemed a little thin but might suffice in a pinch. Flat panel displays should be paired with a stereo system ideally, in any application. And no, the screen / speaker technology doesn't cause the screen to vibrate visibly... that wouldn't make for a very good viewing experience.

LG is the only manufacturer on the market that deals in HD-DVD / Blu-ray combo players. Following Toshiba's recent announcement that it was killing HD-DVD, the price of the BH200 Super Blu player was cut from \$799 to \$499, just in case there's anyone out there that had time to build an extensive HD-DVD collection.

Saving the best for last... the LG90, LED back lit panel brings the truest blacks we've ever seen on an LCD. LG has so much faith that it's submitted the panel for THX picture certification. LCDs traditionally haven't been considered for certification because they can't create true blacks. By allowing a portion of the 3,000 LEDs that back light the screen, the panel can create the true blacks that have evaded LCD for so long. The LEDs are arranged in "sectors" which can be turned off when the portion of the screen they're lighting needs to display black. It is a simple concept with an impressive result. Lee says the numbers aren't really in but that LG is calling it a 1 million to one contrast ratio.

*By Andrew Moore-Crispin*



# Appeasing the Search Engine Gods

*Does your site need to be listed as number 1? Should you even care?*



## Part 1: What was, what is and what will be

On January 19, 2008 the Web site for Performance Diesel Injection went live. A new business located in Markham, ON, Performance Diesel services a very specific segment of the automotive industry. With over 20 years of personal experience in the industry, owner Giles Gallie felt that having a Web site was essential.

"There are a lot of competitors out there," says Gallie. "I felt it was important to be ranked at least on the first page of a Google search. I would say that our site is a big part of our marketing efforts."

This view is common among many business of all sizes and industries. Even individuals who want to be known for their books, accomplishments, or personal ideas believe that their ultimate success lies in the results of search engines.

This fixation with search engine rankings has led to an entire industry of companies, self proclaimed gurus, and consultants eager to show anyone willing to pay their fees how to not only be listed as number one, but perhaps even one through ten.

To fully understand where this

obsession started, let's rewind a few years. In the mid 1990s, HTML pages started pouring into what was then called the World Wide Web. Search engines such as Yahoo!, AltaVista and Lycos scoured the Web with crawlers, mini programs that gathered data and sent it back to the search engines for indexing. Yahoo!, in addition to using crawlers, also manually indexed data which many users felt provided more relevant search results. (Yahoo! ceased manual indexing in 2002, choosing instead to work with Google's automated indexing methods.)

These crawlers looked for specific items such as links, photos, text and meta tags. Entering certain words in a search engine would bring up a list of sites that the engines felt most closely matched the search criteria.

By 1997 Web developers had begun to realize the importance of search rankings. While pay-per-click advertising was still years away, getting high rankings was seen as a key element to the success of a site solely from a marketing perspective. At the time, it was hard enough to convince many businesses to invest in a Web site, less so if no one would actually see it.

The use of meta tags quickly

developed into the tool of choice. As more search engines developed algorithms to sort and process sites by relevance, the key words contained within the meta tags began to play a more influential role. Developers had the power to strongly influence how their sites would be listed in search results.

Key words that were not reflective of the actual content often resulted in skewed search results. Deceptive meta tags resulted in sites that quickly became a thorn in the side of every search engine who relied on effective results to attract visitors.

In 1998, Larry Page and Sergey Brin founded Google, a search engine that relied on a new set of algorithms. The result was listings that mathematically rated sites by relevance rather than solely on developer's code.

During this time, developers discovered that sites with links generally ranked higher than sites without. This resulted in the next "tool" to increase rankings. The creation of link farms provided an opportunity to have sites linked to dozens of other "sites."

Companies would sell links to bogus or virtual sites and have other sites link back to you. Like the key words that were so effective in the past, the search engines got fooled again.

But search engines never rest. With

their survival dependent on reliable, relevant and accurate results, their highly secretive algorithms were, and continue to be, modified and updated.

Which brings us to today. A population of Web developers, users, and marketers hungrier than ever to reach that status of number one in search results. And with that a new set of tools and companies that promise to do it.

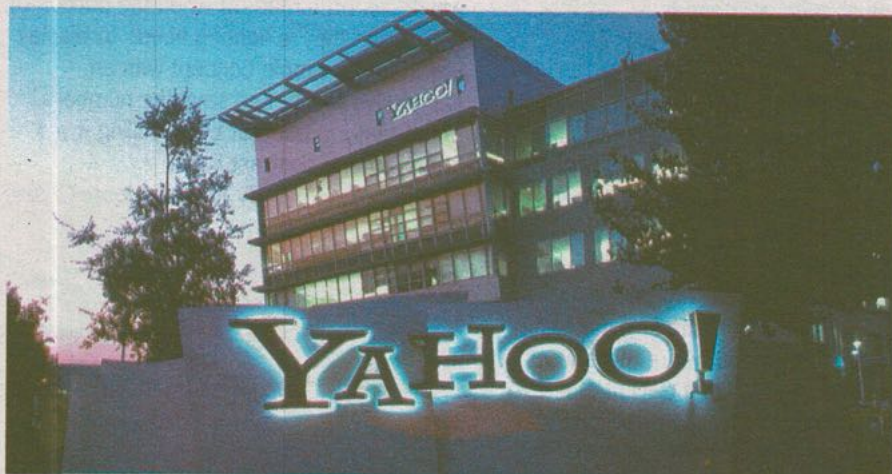
The question is, are these legitimate tools that truly add to the effectiveness of search engines, or just another set of tricks for the purpose of creating Google food?

By Marc Gordon

**Next month: part 2 - Boosted page ranks and search engine results through social network linking. Innovation or Internet folly?**

*Marc Gordon is a professional speaker and the owner of Fourword Marketing, a branding and marketing firm located in Thornhill, Ontario. Fourword specializes in helping businesses create a brand identity and developing effective marketing campaigns. Marc can be reached at 416-238-7811 or visit [www.fourword.biz](http://www.fourword.biz).*

# Google™

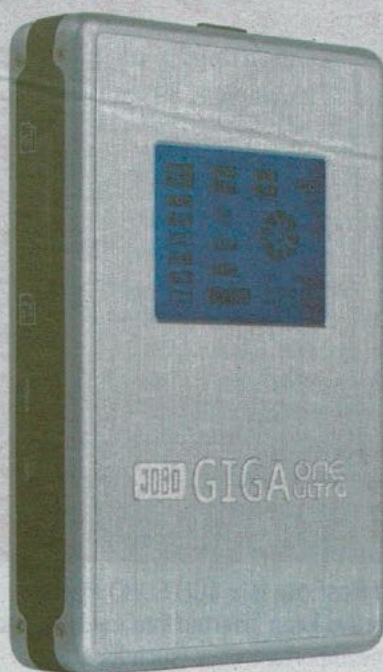




# The Ongoing Photographic Problem

*Storing and securing your photos away from home*

Jobo Giga One Ultra



compression. In both situations the net result is a larger file size for each image. For example, a 10 megapixel image saved in RAW format might be 12MB; as a high quality JPEG it might be 6MB; while a regular-quality JPEG might be just 2MB.

If you have been shooting digitally for a while, you probably realize that it is not hard to take dozens or even hundreds of exposures just tromping around your favourite familiar places. Imagine how much more you'll see and want to photograph in a far away land. The last thing you want to face when you hit upon that once in a lifetime photo op is the flashing "card full" message on your camera. If you are going on a two week vacation to an exotic place, the thought may cross your mind: 'how many photos will I take?' Will it average out to 20 a day or 200 a day?

Based on past trips, I've estimated the most I'll likely shoot in a single day and simply carry enough memory cards to meet that volume, plus a bit more for a cushion. That takes care of one day, but then what? Short of buying enough cards to serve you for the entire trip (which can be an expensive solution), you have three other options: digital wallets, notebook computers or an online storage solution.

Digital wallets are essentially battery-powered hard drives with an onboard card reader. They are light enough to carry with you and have enough battery capacity to download images from a few cards. They vary in capacity and features. Units like the Epson P series or Jobo GigaVu are full multimedia players with gorgeous colour screens that allow you to preview images and support the viewing of a number of RAW formats. At the other end of the



Jobo GigaVu

spectrum are units like the Jobo Giga One Ultra, which are for storage only, with no image playback screen, just a mono LCD for menu navigation. The latter category trades the ability to view images for lighter weight and lower cost.

Digital wallets aren't perfect field storage solutions, although they continue to improve. Because they contain mechanical hard drives, they are vulnerable to shock. If you drop one on a hard surface like a sidewalk or have one tumble down a rock face, you might be kissing goodbye to all the images the device contains. Some newer devices contain shock protection which lessen this danger. This can be either an accelerometer-based circuit that senses a fall and safely parks the hard drive heads before impact, shock absorbing materials like gels to surround the drive, or both.

Improvements are also being made to download speed and battery life. For example, I have an older device that takes around 10 minutes to download a gigabyte's worth of images and I might be able to download around 10GB on a single battery charge. Newer devices claim to be able to download a gig in around a minute and have enough juice to download more than 100GB between charges. If you go back to a hotel or somewhere with electricity every night, the download speed or battery life of less capable devices won't be as big an issue.

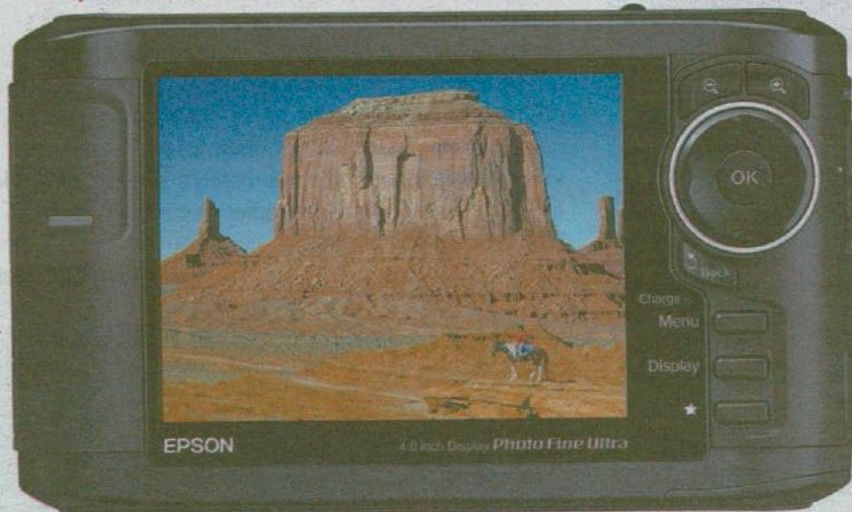
But if you are going back to a hotel every night, you might consider bringing a notebook computer on your trip. You can download your images to the computer hard drive every night, and since most notebooks have an optical

recorder, you can also back up your images to CD or DVD for an extra measure of protection. If your hotel has high-speed internet, you have a third option: online storage. Online photo sharing sites give you some storage as part of the free service, but substantially more space if you opt to pay for a premium service. However, uploading multiple megabytes of files every night can be a time sink, especially if your hotel's advertised "high speed" internet is more of a marketing tool than a reality.

Just how many photos can a body take on an outing? Here's an extreme case. I recently attended a workshop given by a famous Canadian travel photographer. During the Q&A one audience member asked how many photos he took during a typical assignment. His reply: around 12,000. I did a quick calculation. If he shot highest quality JPEGs at an estimated 4MB per image, he'd need 48,000MB, or around 50GB of storage. If he shot RAW at, say 12MB per image, his storage needs would jump to 144GB. Of course most of us photo enthusiasts are not going to shoot 12,000 images during a single trip — but if we ever want to, we can rest easy knowing that the trail has been blazed for us already.

*By David Tanaka*

Epson P-5000





# Securing Your Sensitive Data

*Tips and techniques for protecting your digital life while on the go*

Millions of Canadians now tote around a laptop and for good reason: they're relatively affordable, powerful, and we can log online virtually anywhere, wirelessly, thanks to Wi-Fi hotspots and WAN cards.

But what happens if your laptop is stolen, lost or dropped? The unfortunate reality is losing the computer itself may be the least of your worries if you consider the valuable personal or company data that resides on it.

The good news is there is no shortage of hardware and software solutions that — coupled with a bit of common sense — can greatly reduce the chances of losing the potentially sensitive information held on your notebook.

The following are a few considerations. We'd recommend you opt for more than one of these suggestions to help safeguard your data, but perhaps not all five are necessary.

## Encrypt it

While third-party options are available, many mobile executives are using Windows Vista's built-in BitLocker encryption technology that can protect the data on the laptop should it fall into the wrong hands. Available in Windows Vista Enterprise and Windows Vista Ultimate, this data protection tool encrypts the entire Windows operating system volume on the hard disk (including user files and system files) so that the data is inaccessible unless the user provides the right

password or biometrics I.D. (see below). Naturally, it's also recommended you password-protect your Windows or Mac laptop upon boot-up in case it's found by someone with malicious intentions.

## Lock it

If you must be away from your laptop for a couple of minutes, such as going to the bathroom while in an airport lounge, physically secure your PC with a cable and lock solution. And it doesn't need to be a costly solution: Kingston says its \$45 MicroSaver Notebook Lock is the world's best-selling notebook lock; it features an aircraft-grade steel cable and keyed lock. A hardware lock is best considered a deterrent though. Thieves can get past a lock if motivated (and prepared) enough. Kensington also makes more portable versions of its notebook lock, some of which feature a keyless four-wheel combination lock and a retractable cable.

## Copy it

It doesn't really matter which you prefer — recordable discs, USB thumbsticks, external hard drives or online services — but mobile computer users should back-up their important files on a regular basis and keep that backup in a separate place. In other words, not in your laptop bag in case it's stolen or lost, taking your backup along with it. Personally, I have two solutions (you can never be too careful!), both of which use

## The sky's the limit

As we've touched on in this article, online back-up solutions are increasingly popular because uploaded files are protected against local threats, such as theft, fire or flood.

Microsoft has just unveiled up to 5GB of free storage per month with its new Windows Live SkyDrive ([skydrive.live.com](http://skydrive.live.com)) service. Not only is this password-protected online file storage solution easy to use but you can access your files from any Internet-connected computer in the world, which can prove very handy while travelling.

We also detail a number of other online and offline backup solutions in this issue because the most effective data security solution is the one that works best for you.

encrypted zipped files: one is a 4GB SDHD Flash memory card I always keep inserted into my laptop to store copies of my important work (such as articles newly written on the plane) while the other is an 8GB USB Flash drive I keep in my jeans' coin pocket at all times (just in case the laptop goes missing with the Flash card inside it).

## Scan it

Many laptops now offer a fingerprint reader, so you — and only you — can access your important files and folders. Usually this finger scanner is located near the keyboard or just underneath the laptop's LCD screen. Many PC manufacturers are offering laptops with biometric security, such as HP, Lenovo, Sony, Fujitsu and others. Some companies encourage employees to use both a password and biometrics solution. A few third-party fingerprint scanners exist, such as a USB-based model from Microsoft, but the Redmond, WA-based company suggests this accessory be used for convenience, such as not having to remember many passwords on your favourite websites, rather than to secure your company's data.

## Secure it

Finally, be cautious of wireless networks when travelling as there have been many instances of fake Wi-Fi networks set up by nasty types in an effort to steal personal, financial or corporate data. Sure, it's tempting to use a free connection your laptop sniffed out instead of paying the hotel's \$10 fee but you may not realize these could be rogue connections set up to steal your data. On a related note, wherever possible, users should log into their company's secured network to send messages or files rather than relying on free Web-based email programs.

By Marc Saltzman



For more of Marc Saltzman's articles, visit the [hubcanada.com](http://hubcanada.com) writer minisites area at [www.hubcanada.com/writers](http://www.hubcanada.com/writers)



# Business Directory

## 1stDataRecovery.com

### Dead Drive Cleanroom Service \$500<sup>00</sup>

From dead, deleted, formatted, fdisked, corrupted, virus infected, passworded, CD, water & fire damaged, overwritten, inaccessible devices: hard drive, raid, zip, DVD, Removable, optical, flash memory, tape, audio / digital image files ...

#### Forensic service

Windows / Mac / Unix / NetWare

16 Years of Quality Service

Data back in as little as 24 hrs.

(604) 681-3770 Toll Free: 1-877-460-3670

Business hours: M-F: 9:30am-5pm

1050 W. Pender St. Suite 745, Vancouver, BC V6E 3S7

Info@1stDataRecovery.com www.1stDataRecovery.com



WHEN YOUR SYSTEM CRASHES,  
WHAT MATTERS MOST IS  
GETTING YOUR DATA BACK



CBL Data Recovery

WE RECOVER THE DATA OR YOU DON'T  
PAY. YOU ONLY PAY FOR RESULTS!

1.800.551.3917 | www.cbltech.ca

## TECHNOTRASH RECYCLING BC

Certified electronic recycling company in BC  
We Recycle various kinds of electronic products  
We also buy non-ferrous metals and electronic parts

### FREE DROP-OFF

455 Industrial Ave Vancouver BC

(Near Chinatown)

9:00am to 5:00pm (Weekdays)

Please call for details 604-893-8901, 604-630-7912

Or visit our website

WWW.TECHNOTRASHRECYCLING.COM



## Big Computer Swap Meets

### SATURDAY

April 12th, May 10th & June 7th, 2008 11:00 am-4:00pm

Croatian Cultural Centre, 3250 Commercial Drive, Van., BC

Bargains, Deals, Fun, Great Prices, Expert Advice  
www.geocities.com/turnbuckle99

### ADMISSION:

Adults \$3.00 Kids Under 12 Free,  
Family Rate: \$9.00 (4 members)

For Table Reservations and More info:  
Phone: 604-521-6304 Email: funpromo@shaw.ca

#1 DOMAIN REGISTRAR IN CANADA

# DOMAIN NAMES

\$9<sup>95</sup> /yr.  
Canada's Best Price!

> .com / .ca / .org / .net  
> FREE E-mail > FREE Privacy  
> Satisfaction Guaranteed



www.netfirms.ca



netfirms



## Lost Data? Don't Panic!

ReStoring Data Inc. Can Help You!

- ✓ Hard Drive Recovery (Desktop/Laptop)
- ✓ Memory Card Recovery
- ✓ Raid Array Recovery
- ✓ Removable Media Recovery
- ✓ Any Media, Brand or OS
- ✓ Fast Turnaround

We provide FREE evaluations and offer a No Data No Charge policy.

Toll Free: 1 (877) 737-8003

Sales@ReStoringData.ca

666 Burrard St. Suite 500 Vancouver, BC V6C 3P6

www.ReStoringData.ca

# Call

(604) 696-1389

to place your Ad here



## CRYSTAL COMPUTER LTD.

鴻圖電腦

Computer sales & services since 1998.

Check out our

Deal of the week,

Click the BLUE SPECIAL  
BUTTON in website

All Hardwares/Softwares, Systems, Memories, Printers,  
Surveillance Equipment, Laptops, LCD, Ink/Toner/Network,  
Accessories, etc... Experienced repair, install, upgrades,  
troubleshooting. Corporate/Govt/School P.O. Welcome.

Unit 6, 3490 Kingsway, Vancouver BC V5R 5L7

Hours:

Between Boundary and Tyne, next to SUBWAY Mon-Fri: 10am-6:30pm

Tel: 604-436-4551, Fax: 604-436-4000

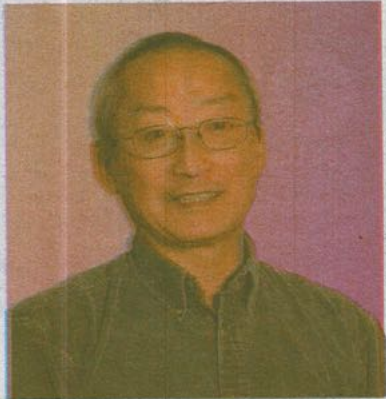
Sat: 10am-5:30pm

email: info@cclcpr.com www.cclcpr.com



# The Last Byte

*Small storage we've known and loved*



I was cruising a photo retailer's site the other day looking for cheap memory for my camera and came across an IBM one gigabyte MicroDrive for \$49. My mind immediately flashed back to an IBM briefing I attended several years ago when I first saw the MicroDrive. This was a marvel of miniaturization. IBM initially launched with two versions, 170 MB and 340 MB. Both used one-inch hard drive platters stuffed within the confines of a Type II CompactFlash enclosure. IBM soon followed it with higher-capacity versions including a whopping one gigabyte

MicroDrive with an equally whopping \$1,000 price tag to match. Although high, the price per megabyte was still lower than flash memory of the day. Hitachi bought the microdrive business from IBM and developed other models including a 4GB version (the same photo retailer lists the Hitachi 4GB MicroDrive for \$99). Eventually though, the cost per megabyte advantage as well as overall capacity shifted to flash memory and MicroDrives are now mainly a curiosity. Last month, for example, Sandisk announced a 16GB UDMA CompactFlash card.

Around the same time IBM was marching out the MicroDrive, Iomega was building on its Zip drive strong suit to come up with a miniature version of the same — the Klik! drive. The floppy material was surrounded by a metal enclosure 50 x 55mm and a couple of millimetres thin and had a capacity of 40MB. The most common variation was the PC Card drive, where the drive mechanism was stuffed into a Type I PC Card. The card was designed with the drive bay at the end so that the individual Klik! media could slide in and out while the drive remained in a notebook's PC Card slot. You potentially had unlimited storage, 40MB at a time. Iomega came out with a couple of other products based on the Klik! including a music player and a photo storage and playback unit, but the products never gained traction and the Klik! ended as a commercial flop.

A happier fate was in store for another small drive being developed at the time — the 1.8-inch hard drive. Initially these were sold as PC Card based removable drives for notebook computers, and were available from a few manufacturers including Toshiba and Kingston Technology. Although the PC Card has been superseded,

development of the 1.8-inch hard drive continues. This drive offers a sweet spot convergence of physical size, price and capacity for all kinds of consumer devices such as small form computing devices, music players and portable storage. Toshiba, which introduced the first 1.8 inch PC Card drive in 2000 (a 2GB model) has continued to increase capacity so today, its biggest 1.8 inch drive is a 120GB monster. Last year Samsung introduced an even bigger 1.8-inch hard drive called the SpinPoint N2 with 160GB capacity.

There's an interesting race being replayed in the 1.8 inch and more common 2.5 inch form factor between mechanical and solid state drives. Right now it seems that mechanical is way ahead, both in price and capacity. Witness the \$1,300 price difference between the recently introduced MacBook Air with a standard drive and one with a smaller capacity solid state drive (although the price difference isn't totally due to the different drive). SanDisk has established a solid state drive or SSD business unit, and has products in the 2.5 inch notebook and the 1.8 inch ultraportable drive enclosure sizes, which it has been marketing as drop-in replacements for mechanical drives in notebook computers and other hard drive based devices. The benefits are faster read/write, lower power consumption and higher immunity to physical jarring and bumps. However capacity still lags mechanical drives. Sandisk's biggest 2.5 inch drive so far is 64GB while the latest 1.8-inch SATA SSD tops out at 72GB. Nevertheless, OEMs are being attracted to the technology. At Cebit last month, SanDisk announced its 32GB 1.8 inch SSD had been selected for use in the F5 tablet PC developed by Motion Computing.

At CES in January Samsung introduced an even smaller form — a 1.3 inch drive. LaCie has announced two products using 30GB and 40GB versions of the Samsung drives. The USB Key Max is of credit card dimensions (although thicker) with an embedded USB connector, while the Little Box is — a little box measuring 67 x 43 x 17mm (2.64 x 1.69 x .67in.) and weighing just 85g (3oz.). If the 1.3-inch drive factor proves to be popular, you can expect the solid state folks will be jumping in with their own solutions, and thus another race.

Eventually we'll look at these with a nostalgic smile much like we do with past glories like the MicroDrive. Some time soon, new storage forms that we think are the cat's whiskers won't be much bigger than the same.

*'Until next time,  
David Tanaka*

Visit

**hubcanada.com**

**win!** A Kodak prize pack including:

#### EasyShare 5300

This revolutionary multi-function printer makes it easy to create lab-quality photos right on your desk. It prints high quality 4x6 pictures in as little as 28 seconds and has received numerous industry accolades for its innovative ink system that makes it affordable to print and even copy at home. In black and white the EasyShare prints at up to 32 pages per minute (ppm) and up to 30ppm colour. The 3-inch colour LCD screen makes it easy to do simple photo editing right on the EasyShare 5300.

#### EasyShare M853

The 8.2 megapixel EasyShare M853 features a 3X optical zoom lens (35 mm equivalent: 37-111 mm) and on-board digital image stabilization. Its HD still capture feature optimizes photos for display on high definition TVs. The large 2.5-inch LCD screen makes it easy to frame the scene and combined with 17 scene modes, makes sure you'll catch the moment. The EasyShare M853 also records continuous VGA video (640 x 480) at 15 fps with sound and on-camera editing capability.



EasyShare M853



EasyShare 5300

**Kodak**



# HOST with Confidence!

## Web Hosting

from **\$6.95**/mo



## Dedicated Server

from **\$149**/mo



## Server Colocation

from **\$150**/mo



## Web Hosting by dollarhost.com

- Linux and Windows Hosting
- Upto **2,000 MB** Web Storage
- Upto **50,000 MB** Data Transfer
- POP / IMAP Email Accounts
- Web-based Email Access
- Email Aliases / Forwarding
- **Email Virus Scanning** by Symantec Carrier Scan Server™
- Multiple FTP accounts
- **MS FrontPage Support**
- **PHP / CGI / ASP / ColdFusion**
- **Database Support**
- E-commerce Ready
- SSL Secure Server
- Website Statistics
- Web-based Control Panel
- **Toll Free Phone and Email Support**
- **FROM ONLY \$6.95/mo.**

## Dedicated Server

### Linux Server only \$149/mo

- Intel Dual Core 2.8GHz
- **512MB RAM**
- 120GB Hard Drive
- **500 GB\* Monthly Data Transfers**
- Fedora Linux Server
- **Ensime® Pro** for Linux
- Web-Based Control Panel
- **Host Unlimited Domains**
- Setup Fee: \$149
- Monthly Fee: \$149
- \* On 6 months contract



### Windows Server \$249/mo

- Intel Dual Core 2.8GHz
- **512MB RAM**
- 120GB Hard Drive
- **500 GB\* Monthly Data Transfers**
- Windows Server 2003 Web Edition
- **Ensime® Pro** for Windows
- Web-Based Control Panel
- **Host Up To 250 Domains**
- Setup Fee: \$249
- Monthly Fee: \$249
- \* On 6 months contract

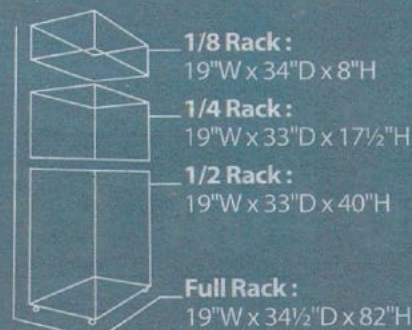


## Server Colocation

- Fully Redundant BGP4 Network
- 100Mbps Fast Ethernet Switched Port
- UPS Power
- Diesel Generator
- 24/7 Facility Access
- Online Traffic Reports

### Now More Data Transfers!

|           |                 |             |
|-----------|-----------------|-------------|
| 1/8 Rack  | 20GB Transfer   | \$150/mo    |
| 1/8 Rack  | 200GB Transfer  | \$200/mo    |
| 1/4 Rack  | 500GB Transfer  | \$450/mo    |
| 1/2 Rack  | 500GB Transfer  | \$600/mo    |
| Full Rack | 500GB Transfer  | \$995/mo    |
| Mbps      | Fixed bandwidth | Please Call |



### New 10Mbps Internet Access \$1195/mo

- 10 Megabits Per Second full duplex dedicated internet connection at your office
- ~~\$1895/mo~~ \$1195/mo introductory special.\*
- Static IPs and Unlimited traffic included

## Domain Registration From US\$ 15/yr

- .com, .net, .org, .ca, .biz, .info
- free domain parking
- free "under construction" page.

**In2net** provides you with fast, reliable web servers, shared or dedicated, professionally configured to perform strong and priced affordably. Our company has helped thousands of Canadian businesses and individuals establish their web presence since 1996.

**In2net Performance Dedicated Servers** come out-of-box ready to host websites. All hardware, software and bandwidth is included along with powerful graphical user interfaces for non-technical administrators to operate the server. For Hosting Providers, webmasters & individuals who need full control and customization - without the hardware investment costs. Order today and begin hosting tomorrow.

**Web Hosting Solutions from DollarHost** offers support for many popular applications at affordable prices.

**Call in2net Today for More Info. 604-608-6868. [www.in2net.com](http://www.in2net.com)**

**in2net**  
network inc.



# TAKE ADVANTAGE OF US.



## \$50 FOR 1 FULL YEAR OF WEB HOSTING\*

2 FREE ".COM" DOMAINS 500 EMAIL ACCOUNTS 2000 GB TRANSFER  
250 GB DISK SPACE FREE GOOGLE ADWORDS 24/7 CUSTOMER SUPPORT  
FREE WEB STARTER KIT EASY TO USE CONTROL PANEL

### NETFIRMS ADVANTAGE PLAN

[WWW.NETFIRMS.COM/50](http://WWW.NETFIRMS.COM/50)

1-866-761-6399

#### LIMITED TIME OFFER

\*Offer includes the full Netfirms ADVANTAGE hosting plan with all of its standard features. Offer valid for new account activations only. Offer subject to change without notice and cannot be combined with any other offer. Offer expires March 31st 2008. ©2008 Netfirms, Inc. All rights reserved. Netfirms is a registered trademark of Netfirms Inc. Other trademarks are property of their respective owners.



**netfirms.ca<sup>®</sup>**

Your website. Host it today.